This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

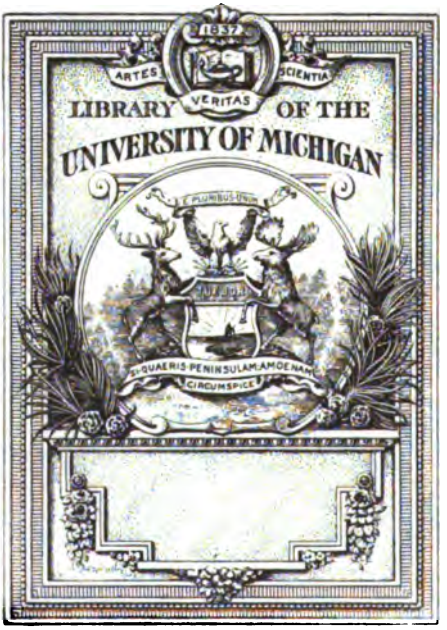
+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`


1837
ARTES
SCIENTIA
VERITAS
LIBRARY OF THE
UNIVERSITY OF MICHIGAN
SI QUAERIS PENINSULAM AMOENAM
CIRCUMSPICE

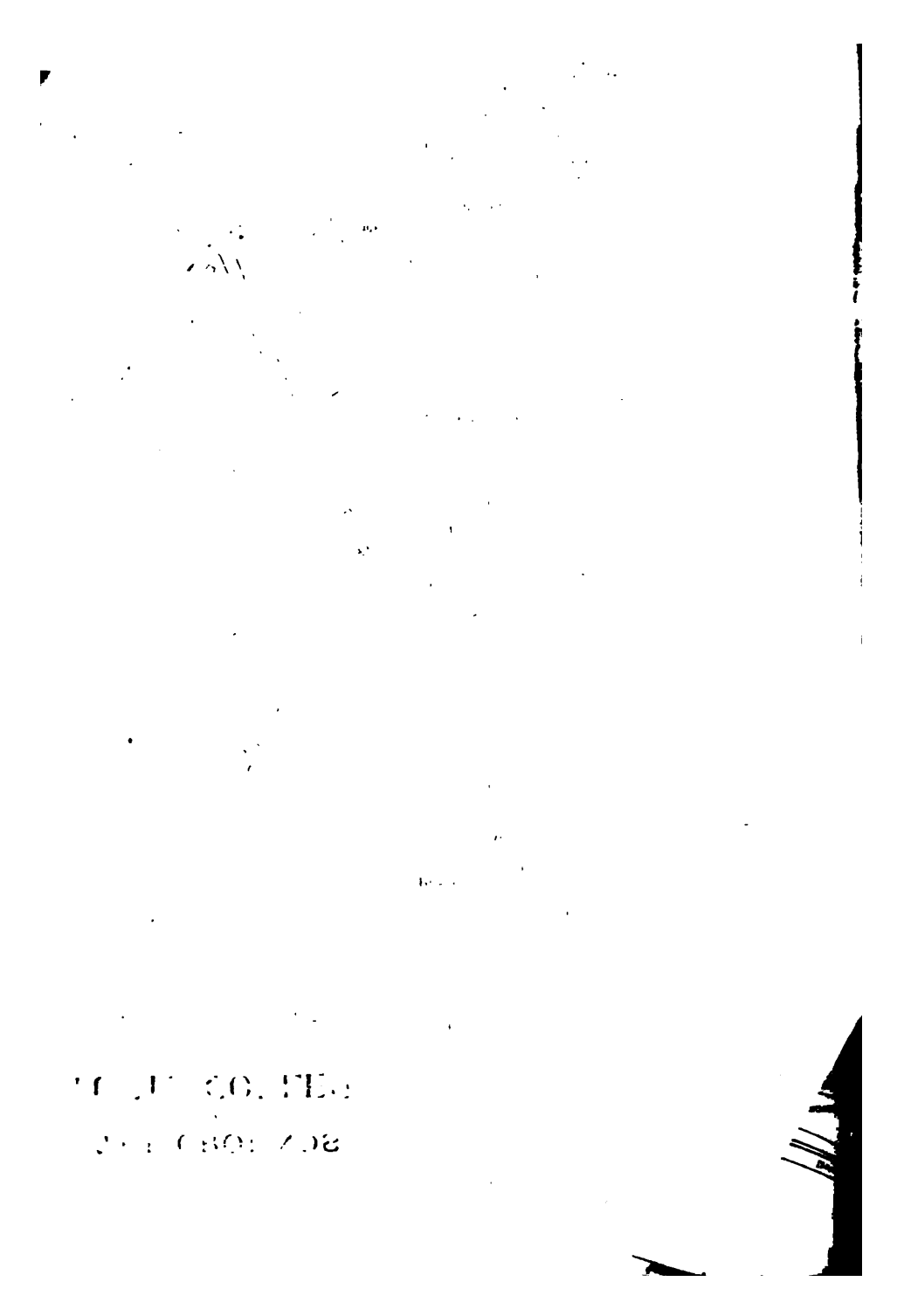
TUFTS COLLEGE CATALOGUE

1903-1904

Published monthly from December to June, inclusiv
at Tufts College, Mass., by the Trustees of Tuf
College. Copies may be had by addressing the Secretary,
HARRY G. CHASE, Tufts College, Mass.

☞ The post-office address of the College of Letters, the
Divinity School, the Department of Engineering, and the
Bromfield-Pearson School, is TUFTS COLLEGE, MASS

The address of the Medical and Dental Schools i
416-430 HUNTINGTON AVENUE, BOSTON, MASS.



TUFTS COLLEGE CATALOGUE

PHOTO BY E. C. HARTSHORN

TUFTS COLLEGE FROM POWDER HOUSE SQUARE

Tufts College Publications
New Series, Vol. IV, No. 1

CATALOGUE

OF

TUFTS COLLEGE

1903–1904

Published in December, 1903, by the Trustees of Tufts College

Entered at the Post-Office at Tufts College, Mass.
as Second Class Matter

THE TUFTS COLLEGE PRESS
H. W. WHITTEMORE & CO.
1903

Calendar

1903 1904

SEPTEMBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

OCTOBER

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

NOVEMBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

DECEMBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

JANUARY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

FEBRUARY

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29					

MARCH

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

APRIL

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

MAY

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

JUNE

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

JULY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

AUGUST

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Tufts College is a railway station four miles from Boston on the Southern Division of the Boston and Maine Railroad. The post-office address is — TUFTS COLLEGE, MASS.

262488

Contents

PAGE

Plan of the College Grounds (next to front cover).
Calendar 8
Historical Sketch 10
The College Charter 15
Constitution of the Board of Overseers 17

ADMINISTRATION

Trustees 20
Overseers 21
Boards of Visitors 22
Officers of Instruction and Government 23
Proctors 33
Russell Lecturer 33
Editors of Tufts College Studies . 33
Curators of Buildings 33
Faculty of Arts and Sciences
Standing Committees 34

COLLEGE OF LETTERS

Faculty of the College of Letters 37
Other Instructors 39
Committees on Promotions 39
Requirements for Admission 41
The Primary Group 43
The Secondary Group 47
General Information 53
Requirements for Degrees . . . 56
For A.B. 56
For S.B. 58
Departments of Instruction (Courses in Liberal Arts) 59
Major Departments 59
English 60
Oratory 62
German 63
French 65
Italian 66
Latin 66
Greek 68
Classical Archaeology 70
Hebrew 71
Philosophy 71

PAGE

Pedagogics 74
History and Public Law 74
Political Science 78
Mathematics 80
Physics 81
Astronomy 83
Chemistry 83
Biology 86
Geology 88
Mineralogy 89
Drawing and Shopwork 89
Civil and Mechanical Engineering . 91
Electrical Engineering 92
Music 93
The Fine Arts 95
Physical Training 95
Tabular View of Program Hours 96
Courses in Science (Leading to Degree of S.B.) 101
General Science 101
Biology 103
Medical Preparatory 103
Chemistry 104

DEPARTMENT OF ENGINEERING

Faculty of the Department of Engineering 109
Committee on Promotions 110
General Information 111
Engineering Courses 113
Civil Engineering 114
Mechanical Engineering 116
Electrical Engineering 118
Chemical Engineering 120
Mathematics 122
Drawing 124
Shopwork 126
Chemistry 128
Physics and Electricity 130
Engineering—Civil and Mechanical 134
English 140
Modern Languages 142
Political Economy 142
Physical Training 142
Tabular Program in Engineering 144

PAGE

GRADUATE DEPARTMENT

Faculty of the Graduate Department 151
Standing Committees 152
Instruction 153
Degrees 153
Departments open for A.M. 155
Departments open for Ph.D. . . . 160
Fellowships 161
Scholarships 162
Tuition 162
BUILDINGS AND EQUIPMENT 163
GENERAL INFORMATION 169
Religious Observances 169
Tufts College Studies 169
Registration 170
Program 172
Promotion 172
Major Subjects 172
Admission from other Colleges . . 173
Special Students 173
Terms and Vacations 174
Absences 174
Expenses 175
Office Hours 177
Scholarships and Other Aids 177
Prizes 181
Committee of Information 183
Honors and Degrees 183

DIVINITY SCHOOL

FACULTY OF THE DIVINITY SCHOOL 187
Non-Resident Lecturers 188
Committee on Promotions 188
CONDITIONS FOR ADMISSION 189
Requirements for B.D. 189
DEPARTMENTS OF INSTRUCTION . . 191
SUMMARY 200
GENERAL INFORMATION 202
SCHOLARSHIPS AND AIDS 203

MEDICAL SCHOOL

FACULTY OF THE MEDICAL SCHOOL 207
Other Instructors 209
Laboratory Assistants 212
Standing Committees 212
Dispensary Staff 213
GENERAL STATEMENT 215
DEPARTMENTS OF INSTRUCTION . . 215
REQUIREMENTS FOR ADMISSION . . 231
ADVANCED STANDING 233
PROMOTION 233
REQUIREMENTS FOR GRADUATION . 233
Honors 234

PAGE

Outline of Course 234
Examinations 236
Text-books 236
GENERAL INFORMATION 238
Expenses 239
Standing and Certificates 241

DENTAL SCHOOL

FACULTY OF THE DENTAL SCHOOL . 245
Other Instructors 246
Laboratory Assistants 247
Standing Committees 248
GENERAL STATEMENT 249
COURSE OF INSTRUCTION 252
REQUIREMENTS FOR ADMISSION AND GRADUATION 259
Examinations 261
Outline of Course 262
Text-books 262
Expenses 263
GENERAL INFORMATION 264

BROMFIELD-PEARSON SCHOOL

BOARD OF INSTRUCTION 268
GENERAL STATEMENT 269
COURSE OF STUDY 270
GENERAL INFORMATION 272

SUMMER SCHOOLS

INSTRUCTORS 276
THE SUMMER SCHOOL AT TUFTS COLLEGE 277
THE HARPSWELL LABORATORY . . 277

REGISTER OF STUDENTS

GRADUATE DEPARTMENT 280
COURSES IN ARTS AND SCIENCES . 281
Special Students 288
DIVINITY SCHOOL 289
BROMFIELD-PEARSON SCHOOL 290
MEDICAL SCHOOL 291
DENTAL SCHOOL 301
THE SUMMER SCHOOL AT TUFTS COLLEGE 306
SUMMARY 307
REGISTER OF THE HARPSWELL LABORATORY 308

DEGREES AND HONORS

FORTY-SEVENTH ANNUAL COMMENCEMENT (Degrees Conferred) . . . 310
Commencement Parts 314
AWARDS OF PRIZES 315

Calendar

1903

SEPT.	17.	College year begins (all departments except the Medical and Dental Schools), Thursday morning.
SEPT.	19.	Regular College exercises begin.
OCT.	4.	Russell Lecture, Sunday, 4.30 P.M.
OCT.	6.	Lectures begin in the Medical and Dental Schools, Tuesday.
NOV.	25.	Thanksgiving recess begins, Wednesday, at 1 P.M.
NOV.	29.	Thanksgiving recess ends, Sunday evening.
DEC.	2.	Announcement of Academic Honors, 12 M.
DEC.	22.	Christmas recess begins, Tuesday evening.

1904

JAN.	5.	Christmas recess ends, Tuesday evening.
JAN.	26.	Mid-year examinations begin in the College of Letters, Tuesday.
JAN.	30.	Mid-year examinations begin in the Department of Engineering, Saturday.
FEB.	6.	End of first half-year, Saturday. Plans of study for the second half-year must be reported before noon of this day.
FEB.	8.	Second half-year begins, Monday.
FEB.	22.	Washington's Birthday, Monday. College exercises suspended.
APRIL	6.	Spring recess begins, Wednesday evening.
APRIL	13.	Spring recess ends, Wednesday evening.
APRIL	19.	Patriots' Day, Tuesday. College exercises suspended.
MAY	13.	Goddard Prize Reading in the College of Letters, Friday, 3 P.M.
MAY	24.	Greenwood Prize Reading in the Divinity School, Tuesday, 3 P.M.
MAY	26.	Final examinations for Senior Engineers begin, Thursday.
MAY	28.	Final examinations begin in the College of Letters, Saturday.
MAY	30.	Memorial Day, Monday. College exercises suspended.
JUNE	3.	Final examinations begin for the Department of Engineering (except Seniors), Friday.
JUNE	10.	Class Day, Friday.
JUNE	12.	Baccalaureate Sermon, Sunday, 4.30 P.M.
JUNE	13.	Entrance Examinations at the Medical and Dental Schools, Monday.
JUNE	15.	Forty-eighth Annual Commencement, Wednesday.

First Examination for Admission to the College of Letters, the Engineering Department, and the Divinity School

JUNE 16. Algebra, 9 to 10.30 A.M.; English, 10.30 A.M. to 12.30 P.M.; Plane Geometry, 2 to 4 P.M.; Physics, 4 to 5 P.M.; Drawing, 4 to 6 P.M.

JUNE 17. Elementary and Advanced Latin, 9 to 12 A.M.; Advanced Mathematics, 9 to 11 A.M.; Natural History (two subjects), 11 A.M. to 1 P.M.; History, 2 to 4 P.M.; Chemistry, 4 to 5 P.M.

JUNE 18. Advanced German and French, 9 to 11 A.M.; Elementary German and French, 11 A.M. to 12.30 P.M.; Elementary and Advanced Greek, 2 to 5 P.M.

JUNE 20 to SEPT. 15. Session of the Harpswell Laboratory.

JUNE 20 to JULY 30. Session of the Summer School at Tufts College.

Second Examination for Admission to the College of Letters, the Engineering Department, and the Divinity School

SEPT. 19. Advanced German and French, 9 to 11 A.M.; Elementary German and French, 11 A.M. to 1.30 P.M.; Elementary and Advanced Greek, 2 to 5 P.M.

SEPT. 20. Algebra, 9 to 10.30 A.M.; English, 10.30 A.M. to 12.30 P.M.; Plane Geometry, 2 to 4 P.M.; Physics, 4 to 5 P.M.; Drawing, 4 to 6 P.M.

SEPT. 21. Elementary and Advanced Latin, 9 to 12 A.M.; Advanced Mathematics, 9 to 11 A.M.; Natural History (two subjects), 11 A.M. to 1 P.M.; History, 2 to 4 P.M.; Chemistry, 4 to 5 P.M.

SEPT. 22. College year begins, Thursday morning.
Registration of all students at the Secretary's office.
Major departments and plans of study for the first half-year must be reported before 4 P.M. of this day.

SEPT. 24. Regular College exercises begin.

OCT. 1. Entrance examinations at the Medical and Dental Schools, Saturday.

OCT. 2. Russell Lecture, Sunday.

OCT. 4. Lectures begin in the Medical and Dental Schools, Tuesday.

NOV. 23. Thanksgiving recess begins, Wednesday, at 1 P.M.

NOV. 27. Thanksgiving recess ends, Sunday evening.

NOV. 30. Announcement of Academic Honors, 12 M.

DEC. 22. Christmas recess begins, Thursday evening.

1905

JAN. 5. Christmas recess ends, Thursday evening.

JAN. 31. Mid-year examinations begin in the College of Letters, Tuesday.

FEB. 4. Mid-year examinations begin in the Department of Engineering, Saturday.

FEB. 11. End of the first half-year, Saturday.

FEB. 13. Second half-year begins, Monday.

Historical Sketch.

Tufts College was established under a charter granted on the twenty-first day of April, 1852, by the General Court of Massachusetts. Under this charter, as later amended, the College is empowered "to confer such degrees as are usually conferred by colleges in New England." Its organization now comprises the College of Letters, the Divinity School, the Medical School, and the Dental School. The College of Letters gives the degrees of Bachelor of Arts, Bachelor of Philosophy, and, for special courses in science and engineering, Bachelor of Science; also the graduate degrees of Master of Arts, Doctor of Philosophy, Civil, Electrical, and Mechanical Engineer. The course in the Divinity School leads to the degree of Bachelor of Divinity; that in the Medical School to the degree of Doctor of Medicine; and that in the Dental School to the degree of Doctor of Dental Medicine.

The Foundation.—The movement resulting in the founding of the College was set on foot in 1847, through the efforts of the Rev. Thomas J. Sawyer, of New York, the Rev. Hosea Ballou, 2d, of Medford, and the Rev. Thomas Whittemore, of Cambridgeport. After much consideration, the work of raising a fund of one hundred thousand dollars for a foundation was undertaken, under the direction of the Rev. Otis A. Skinner, of Boston. About sixty thousand dollars was obtained in money. Sylvanus Packard gave his bond for twenty thousand dollars additional, and Charles Tufts gave twenty acres of land on Walnut Hill, embracing the present site of the College. Mr. Tufts announced his intention of increasing his gift of land to more than one hundred acres, and thus became the largest benefactor of the young institution, which accordingly received his name. Mr. Packard was a Boston merchant, who from the beginning made the College a peculiar care, and bequeathed to

it his entire fortune. Among other benefactors who may be numbered among the founders of the College were Oliver Dean, who gave it ninety thousand dollars, and Thomas A. Goddard, whose gifts, though unobtrusive, were constant. Mrs. Goddard continued the generosity of her husband, and at her death made a substantial bequest to the College. Dr. William J. Walker also made gifts and bequests amounting to nearly three hundred thousand dollars.

While the College owed its beginning to the effort and the support of members of the Universalist denomination, it was provided by the Legislature in the charter that

"No instructor in said college shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said college, on account of the religious opinions he may entertain."

This provision has always been interpreted by the Trustees and Faculty in its broadest sense. The non-sectarian character of the work of the College is amply shown by the membership of its Faculty and student body. The truth, and not the maintenance of any religious or political doctrine, has been the aim of its research and its instruction.

The College of Letters.—The first Faculty meeting was held October 9, 1854, when there were in College students forming the Sophomore and the Freshman class. The only building at that time was the main College Building, now known as Ballou Hall. The next building to be erected was a small brick dormitory, now the Library building. The large dormitory known as East Hall was the next addition to the group, and in 1872 West Hall was opened to students. It was ten years before building operations were renewed by the College. The original Faculty numbered five. The first class, of three members, was graduated in 1857.

At the outset, provision was made for a course of study leading to the degree of Bachelor of Arts. The only feature of its work peculiar to Tufts College in these years of its beginning was the attention given to the study of history. The first presi-

dent of the College, the Rev. Hosea Ballou, 2d, D.D., was likewise Professor of History and of Intellectual Philosophy, and gave instruction in history remarkable alike for its quantity and quality, at a time when the study was hardly recognized in American colleges.

Dr. Ballou was succeeded in the presidency by the Rev. Alonzo Ames Miner, D.D., LL.D., who was inaugurated in 1862, and continued in office until 1875, resigning in February of that year. Dr. Miner's incumbency was marked by large financial additions to the College, and by the further growth of a broad and scholarly spirit.

In March, 1875, the Rev. Elmer Hewitt Capen, D.D., was elected to the presidency of the College, vacated by the resignation of President Miner, and he was inaugurated on the second day of June.

The Engineering courses were begun in 1869 with a department of Civil Engineering. The great development of Electrical science was promptly recognized, and a department of Electrical Engineering was opened to students in 1882, a professorship in the subject being established in 1890. This side of the College work had rapid development: in 1894 the field was broadened by the addition of a course in Mechanical Engineering, and 1898 by one in Chemical Engineering. In these courses effort has always been made to give thorough practical training. The will of the late Henry B. Pearson, founding the Bromfield-Pearson School, and putting it into the hands of the Trustees of Tufts College to administer, provided a thoroughly-equipped building for technical instruction, of great value in drawing, pattern-making, machine and forge work. The Bromfield-Pearson building was completed in the fall of 1894. Robinson Hall, completed in 1900, gives to the technical courses a modern building with every facility for their work. It is given in memory of the late Hon. Charles Robinson, sometime President of the Trustees, by his heirs.

In 1881 the late Phineas T. Barnum gave fifty-five thousand dollars for the establishment of the Barnum Museum of Natural

History, and by his last will he bequeathed forty thousand dollars more. The main Museum building was completed in 1884. The west wing, containing the new biological laboratories, was erected in 1894. The years 1882 and 1883 saw the completion of Goddard Chapel, given by Mrs. Mary T. Goddard as a memorial of her husband, the first treasurer of the College. Goddard Gymnasium, a gift from the same source, was also completed in 1883. The gymnasium has been enlarged and transformed into what is practically a new building. Dean Hall was erected in 1887 from funds bequeathed by the late Oliver Dean. In the College year 1894-95 two new buildings were opened, in addition to the west wing of the Barnum Museum. These were the Chemical building and Commons Hall, containing students' rooms, a dining-hall, and the post-office.

The development of the College in its internal life has been the notable fact of recent years. In 1866 the degree of Bachelor of Philosophy was offered to students who should pursue a prescribed course of two years, the object being to provide for those who had been prepared only in English subjects. This course was maintained until 1875, when it was changed to a course of four years. The requirements for admission were then made the same as for the regular course, except that Greek as a condition of entrance was omitted, and an amount of work in French or German, considerably less than its equivalent, was substituted. In 1891 a new course of study, leading to the degree of Bachelor of Arts, was offered, with an entrance requirement believed to be fully the equivalent of the Greek, in two modern languages. This was one important step taken by the College toward the broadening of its opportunities, but it soon proved to be insufficient. There had been a steady growth for many years in the amount of work done, and in the number of departments of learning represented. Two new departments had been instituted in 1892, in response to the tendencies of educational development,—those of Biology and History. Departments of Music and Philosophy have since been added, the

work in political Science has been broadened and provision made for the study of Public Law. In the fall of 1893 it seemed possible to take another step and to put into operation the present plan of work, which is believed to be an approach to a rational co-ordination and connection of the college and university systems. The principle which governed this adjustment of the College curriculum has been applied to the new entrance requirements.

There were opened in 1895 courses of four years each in Biology, Chemistry, General Science, and Medical Preparatory work, leading to the degree of Bachelor of Science, and accessible to graduates of all good high schools. Bachelors of Science and Philosophy may, if they desire, go on to the attainment of the degree of Bachelor of Arts.

In response to a pressing demand the college was, in the Summer of 1892, opened to women on the same terms as to men. In the fall of 1894 there was opened, for the accommodation of women students, Metcalf Hall, the gift of Mr. Albert Metcalf, of Newton. The Start House now offers home-like rooms for women students.

The Professional Schools.—The will of Mr. Packard required that a professor of Christian Theology should be maintained from the income of funds bequeathed by him. The Rev. Thomas J. Sawyer, D.D., was elected Packard Professor in 1869. This was the beginning of the Divinity School. In 1882 the school had developed so that its Faculty received a definite organization, and Dr. Sawyer became the first Dean, retaining the office until his retirement as Packard Professor Emeritus in 1892. He was succeeded by the present Dean, the Reverend Charles H. Leonard, D.D. From the erection of West Hall until the completion of the separate buildings of the school, the western side of West Hall was occupied by the Divinity School. In 1892, by the gift of Ex-President Miner, the school was provided with Miner Hall, containing the library, class rooms, chapel and reception room; and at the same time,

largely through the efforts of the Dean, the money was obtained to build Paige Hall, a dormitory for students of the Divinity School.

In 1893 Tufts College met what seemed to be a need of the community by opening the Tufts Medical School. The growth of the school in efficiency and numbers justified its institution. The course is four years in length, and, as in other departments of the College, women stand upon the same terms as men.

The Medical School found its complement in the Tufts Dental School, organized in 1899 by the absorption of the Boston Dental College, which was incorporated in 1868, and has a numerous body of alumni. The equipment, funds, and good will of this school passed to Tufts College.

Administration.—The control of the College is vested by the charter in a self-perpetuating body of Trustees, not to exceed thirty in number. As the College has matured the number of its alumni upon the Board of Trustees has steadily increased. To give the Alumni as a whole a direct representation in the administration, a Board of Overseers has been instituted. The several Faculties are appointed by the Trustees, with the approval of the Overseers.

THE COLLEGE CHARTER.

SECTION 1. B. B. Mussey, Timothy Cotting, Richard Frothingham, Jr., their associates and successors, are hereby constituted a body corporate by the name of the Trustees of Tufts College, in Medford, and they and their successors, and such as shall be duly elected members of said corporation, shall be and remain a body corporate by that name forever. And for the orderly conducting of the business of said corporation, the said Trustees shall have power and authority, from time to time, as occasion may require, to elect a President, Vice-President, Secretary and Treasurer, and such other officers of said corporation as may be found necessary, and to declare the duties and tenures of their respective offices; and also to remove any Trustee from the same corporation, when in their judgment, he shall be rendered incapable, by age or otherwise, of discharging the duties of his office, or shall neglect or refuse to perform the same; and also, from time to time, to elect new members of the said corporation; provided, nevertheless, that the number of members shall never be greater than thirty.

SEC. 2. The said corporation shall have full power and authority to

determine what times and places their meetings shall be holden, and the manner of notifying the Trustees to convene at such meetings, and also, from time to time, to elect a President of said College, and such professors, tutors, instructors, and other officers of the said College as they shall judge most for the interest thereof, and to determine the duties, salaries, emoluments, responsibilities, and tenures of their several offices. And the said corporation are further empowered to purchase or erect, and keep in repair, such houses and other buiidings as they shall judge necessary for the said College; and also to make and ordain, as occasion may require, reasonable rules, orders, and by-laws, not repugnant to the Constitution and Laws of this Commonwealth, with reasonable penalties, for the good government of the said College, and for the regulation of their own body; and also to determine and regulate the course of instruction in said College, and to confer such degrees as are usually conferred by colleges in New England; provided, nevertheless, that no corporate business shall be transacted at any meeting unless one-third, at least, of the Trustees are present.

SEC. 3. The said corporation may have a common seal, which they may alter or renew at their pleasure, and all deeds sealed with the seal of said corporation, and signed by their order, shall, when made in their corporate name, be considered in law as the deeds of said corporation; and said corporation may sue and be sued in all actions, real, personal, or mixed; and may prosecute the same to final judgment and execution by the name of the Trustees of Tufts College; and said corporation shall be capable of taking and holding in fee simple, or any less estate, by gift, grant, bequest, devise, or otherwise, any lands, tenements, or other estate, real or personal, provided, that the clear annual income of the same shall not exceed two hundred thousand dollars.

SEC. 4. The clear rents and profits of all the estate, real and personal, of which the said corporation shall be seized and possessed, shall be appropriated to the endowment of said College in such manner as shall most effectually promote virtue and piety, and learning in such of the languages, and of the liberal and useful arts and sciences, as shall be recommended from time to time by the said corporation, they conforming to the will of any donor or donors in the application of any estate which may be given, devised, or bequeathed, for any particular object connected with the College.

SEC. 5. No instructor in said College shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said College on account of the religious opinions he may entertain.

SEC. 6. The Legislature of this Commonwealth may grant any further powers, to, or alter, limit, annul, or restrain any of the powers vested by this act in the said corporation, as shall be found necessary to promote

the best interests of the said College, and more especially may appoint and establish overseers or visitors of the said College, with all necessary powers for the better aid, preservation, and government thereof.

SEC. 7. The granting of this Charter shall never be considered as any pledge on the part of the Government that pecuniary aid shall hereafter be granted to the College.

THE CONSTITUTION OF THE BOARD OF OVERSEERS

SECTION 1. There shall be, and hereby is established, a Board of Overseers of Tufts College.

This Board shall consist of the President of the College, *ex officio*, and sixteen other persons, who shall have received a degree from the College, in course, not less than ten years previous to their election, provided that not less than twelve members of said Board at any time shall be persons who have taken the degree of A. B., S. B., or Ph. B., in course from Tufts College.

No officer of instruction in Tufts College shall be eligible to election to the Board of Overseers, and if an Overseer be appointed to such office of instruction, his position as Overseer shall be thereby vacated.

No Trustee of Tufts College shall be eligible to election to the Board of Overseers, and any member of the Board of Overseers becoming a Trustee of Tufts College shall thereby cease to be an Overseer.

No person shall be eligible for election to the Board of Overseers for more than two successive full terms.

Persons elected to the Board of Overseers must qualify by accepting such election in writing within three months from receipt of notice thereof.

SEC. 2. All persons who have received from the College a degree in regular course, or an honorary degree, shall be entitled to vote for Overseers, provided that no person who has received any degree in regular course shall be entitled by virtue thereof to vote for Overseers before the fifth annual election following receipt of such degree.

SEC. 3. For the purpose of the first election of Overseers a Committee of ten shall be appointed, five chosen by the Trustees of the College, and five chosen by the Association of the Alumni of Tufts College, or its Executive Committee. This committee shall nominate not less than thirty-two candidates, and ballots prepared on the so-called Australian system shall be sent by mail not later than August 1, 1899, to the last known address of every person entitled to vote under the conditions hereinbefore set forth. Such persons may send their ballots, duly signed, to some person designated by said Nominating Committte, so that they may be received at least not later than September 9, 1899, and the sixteen candidates having the largest number of votes shall be declared elected, provided that the provisions of Section 1, regarding eligibility, must not be infringed upon.

The said Nominating Committee shall receive and count the ballots, and ascertain the result of the election. They shall thereupon make report of their proceedings to the Trustees, and shall cause the names of the persons elected to be posted at the College, the first day of the Fall Term. The Secretary of the Trustees shall notify the members-elect of their election and of the first meeting, to be called at such time and place as the President of the College shall designate.

At the first meeting after the first election the elected members of the Board shall be divided by lot into four classes, to hold office one, two, three, and four years, respectively. The term of office of Overseers subsequently elected shall be four years, provided that elections to fill vacancies shall be for the unexpired portion of the term.

After the first election, such vacancies as occur, either by expiration of term or otherwise, shall be filled by an annual election, to be held under such regulations as the Overseers may make, subject, however, to the provisions as to eligibility and right of suffrage herein contained, and provided that voting shall be by mail and according to the so-called Australian system of balloting.

SEC. 4. The Trustees of Tufts College shall submit to the Overseers for approval all nominations for officers of instruction in all departments of the College, whether permanent or temporary, of or above the grade of instructor, together with all votes providing for changes in or additions to departments of instruction. Upon notice of such action as hereinbefore specified, the Overseers may approve or disapprove the same, and notice of the action of the Overseers shall be communicated to the Trustees forth with, provided that failure to act promptly upon any matter submitted to the Overseers shall be taken as approval.

The Overseers shall have power to recommend to the Trustees such action in any matter of college management or government, not purely financial, as may seem to them advisable, including the power to nominate officers of instruction and government.

SEC. 5. The Overseers shall elect a President and a Secretary. It shall be the duty of the Secretary to notify the Trustees of all action taken upon all matters submitted to the Overseers by the Trustees.

The Overseers shall hold stated meetings at such time as they may by general rules determine. The Executive Committee of the Trustees may order special meetings at any time.

The Overseers may adopt regulations and by-laws for the transaction of their business, not inconsistent herewith, and may declare a vacancy in their Board whenever in their judgment sufficient cause exists. No pecuniary liability shall be incurred by the Overseers, except by the authority of the Executive Committee of the Trustees.

THE ADMINISTRATION OF THE COLLEGE

The Trustees

President

HENRY BREWER METCALF

Vice-President

THOMAS HENRY ARMSTRONG

Secretary

HENRY WARREN RUGG, Providence, R. I.
Boston office, 40 Water St.

Treasurer

NEWTON TALBOT, 40 Water Street, Boston

Executive Committee

FREDERICK WILLIAM HAMILTON, *Chairman*

ELMER HEWITT CAPEN	THOMAS HENRY ARMSTRONG
HENRY WARREN RUGG	HENRY DUDLEY WILLIAMS
BYRON GROCE	SUMNER ROBINSON
ALBERT METCALF	THOMAS CUNNINGHAM

Committee on Finance

WALTER EDWARD PARKER, *Chairman*

WILLIAM WALDEMAR SPAULDING	J. FRANK WELLINGTON
ARTHUR ELLERY MASON	J. ARTHUR JACOBS

Trustees

TIMOTHY THOMPSON SAWYER, LITT.D.	Boston
NEWTON TALBOT, A.M.	Boston
ELMER HEWITT CAPEN, A.M., D.D., LL.D.	Somerville
CHARLES SCOTT FOBES, A.M.	Portland, Me.
THOMAS HENRY ARMSTRONG, A.M.	Waltham
HENRY WARREN RUGG, D.D.	Providence, R. I.
JOHN COLEMAN ADAMS, A.M., D.D.	Hartford, Conn.
BYRON GROCE, A.M., LITT.D.	Boston
ARTHUR ELMER DENISON, A.B.	Cambridge
HENRY DUDLEY WILLIAMS, A.M.	Boston
WILLIAM OSCAR CORNELL, A.M.	Providence, R. I.
HOSEA WASHINGTON PARKER, A.M.	Claremont, N. H.
WALTER EDWARD PARKER, A.M.	Lawrence
HENRY BREWER METCALF, A.M.	Pawtucket, R. I

WILLIAM WALDEMAR SPAULDING, A.B. . . . . Haverhill
DAVID CUMMINGS, A.M. . . . . Somerville
FRED STARK PEARSON, A.M.M., S.D. . . . . New York, N.Y.
CHARLES EWELL MORRISON . . . . . Boston
SUMNER ROBINSON, A.M., LL.B. . . . . Newton
ALBERT METCALF, A.M. . . . . Newton
JOHN WILKES HAMMOND, A.B., LL.D. . . . . Cambridge
FREDERICK WILLIAM HAMILTON, A.M., D.D. . . . . Boston
J. FRANK WELLINGTON . . . . . Somerville
WILLIAM ERASTUS GIBBS, A.B., D.D. . . . . Lawrence
ARTHUR ELLERY MASON . . . . . Boston
ROBERT ROBBINS ANDREWS, D.D.S. . . . . Cambridge

The Overseers

President

WALTER PARKER BECKWITH, A.M., PH.D.

Secretary

CHARLES WINFIELD PARMENTER, A.M., PH.D.

Term expires in 1904

WILLIAM BRADFORD FRENCH, A.B.
FRANCIS BISHOP HARRINGTON, A.B., M.D.
FRANK OTIS MELCHER, C.E.
CHARLES WINFIELD PARMENTER, A.M., PH.D.

Term expires in 1905

WALTER PARKER BECKWITH, A.M., PH.D.
HENRY BLANCHARD, A.M., D.D.
WILLIAM DAVIS THAYER TREFRY, A.B.
MINTON WARREN, PH.D., LL.D.

Term expires in 1906

EDWARD HENRY CLEMENT, A.M.
ARTHUR WINSLOW PEIRCE, LITT.D.
SAMUEL WARREN MENDUM, A.M.
MILTON GERRY STARRETT, A.M.B.

Term expires in 1907

ALPHONSUS HOLLAND CARVILL, A.M., M.D.
EDWIN GINN, A.M., LITT.D.
FRANK MORTIMER HAWES, A.M.
FRANK THOMAS DANIELS, A.M.B.

BOARDS OF VISITORS

[Appointed by the Overseers]

To the College of Letters

MILTON GERRY STARRETT, A.M.B.
WALTER PARKER BECKWITH, A.M., PH.D.
EDWARD HENRY CLEMENT, A.M.
ARTHUR EVERETT PETERSON, A.M.
HIRAM AUSTIN TUTTLE, A.M.

To the Divinity School

ARTHUR WINSLOW PEIRCE, LITT.D.
FRANK MORTIMER HAWES, A.M.
FRANK THOMAS DANIELS, A.M.B.
DWIGHT M. HODGE, D.D.
FREDERICK WILLIAMS PERKINS, B.D., A.M.

To the Medical School

ALPHONSUS HOLLAND CARVILL, A.M., M.D.
HORACE PERKINS MACKECHNIE, A.B., M.D.
QUINCY ADAMS SHAW, JR., A.B.
CHARLES SEDGWICK RACKEMANN, A.M.
WILLIAM LINCOLN PARKER

To the Dental School

WILLIAM DAVIS THAYER TREFRY, A.B.
EDWIN GINN, A.M., LITT.D.
QUINCY ADAMS SHAW, JR., A.B.
CHARLES SEDGWICK RACKEMANN, A.M.
WILLIAM LINCOLN PARKER

Directors of the Women

[Appointed by the Trustees]

MRS. MARY LEAVITT CAPEN
MRS. SUSAN PEARSON ANTHONY
MRS. MARY INGRAHAM WREN

Officers of Instruction and Government*

ELMER HEWITT CAPEN, A.M., D.D., LL.D. . . 8 Professors Row
PRESIDENT, *and Professor of Moral Philosophy and Political Economy*

CHARLES HALL LEONARD, A.M., D.D. . . . . 120 Packard Ave.
Goddard Professor of Homiletics and Pastoral Theology, and Dean of the Divinity School

JEROME SCHNEIDER, PH.D. . . . . 28 Professors Row
Professor of Greek

EDWIN CORTLANDT BOLLES, PH.D., D.D. . . . 184 College Ave.
Dickson Professor of English and American History

†BENJAMIN GRAVES BROWN, A.M. . . . . 38 Professors Row
Walker Professor of Mathematics

WILLIAM ROLLIN SHIPMAN, A.M., D.D., LL.D. . 101 Talbot Ave.
Goldthwaite Professor of Rhetoric, Professor of Logic, and Dean of the Faculty of the College of Letters

HENRY WATSON DUDLEY, M.D. . . . . Abington
Professor of Pathology, Emeritus, and Lecturer on Legal Medicine

CHARLES PAINE THAYER, A.M., M.D. Tufts College Medical School
Professor of General, Descriptive, and Applied Anatomy, and Secretary of the Medical and Dental Schools

JOHN LEWIS HILDRETH, A.B., M.D., LL.D.
Professor of Clinical Medicine, Emeritus 14 Garden St., Cambridge

CHARLES DURLIN BRAY, C.E., A.M. . . . . 98 Professors Row
Professor of Mechanical Engineering

AMOS EMERSON DOLBEAR, M.E., PH.D., LL.D. 134 Professors Row
Professor of Physics and Astronomy

ERNEST WATSON CUSHING, A.B., M.D., LL.D.
168 Newbury St., Boston
Professor of Abdominal Surgery and Gynaecology

GEORGE MILFORD HARMON, A.M., D.D. . . . . 114 Curtis St.
Professor of Biblical Theology

* The members of the Faculty, with the exception of the President, are arranged in the order of the time at which their first academic degrees were taken, or the time of their studies, where an academic degree was not taken in course.
† Deceased.

HENRY JABEZ BARNES, M.D. . . . . 429 Beacon St., Boston
Professor of Hygiene

CHARLES ERNEST FAY, A.M., LITT.D. . . . . 92 Professors Row
Wade Professor of Modern Languages

WILLIAM GEORGE TOUSEY, A.M., D.D. . . . 106 Professors Row
Ryder Professor of Ethics and the Philosophy of Theism

GEORGE THOMSON KNIGHT, A.M., D.D. . . . 114 Professors Row
Packard Professor of Christian Theology

EDWARD OSGOOD OTIS, A.B., M.D. . . . . 381 Beacon St., Boston
Professor of Pulmonary Diseases and Climatology

EDGAR OSGOOD KINSMAN, D.D.S. . . 15 Brattle Sq., Cambridge
Instructor in Clinical Dentistry

CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree
Professor of General Chemistry

WARREN SAMUEL WOODBRIDGE, A.M., B.D. 32 Pearl St., Medford
Woodbridge Professor of Applied Christianity

Pearson Professor of Geology and Mineralogy

JOHN STERLING KINGSLEY, Sc.D. . . . . 128 Professors Row
Professor of Biology, and Dean of the Graduate Department

ARTHUR MICHAEL, A.M., PH.D. . . . . 44 Mt. Vernon St., Boston
Professor of Chemistry

MORTON PRINCE, A.B., M.D. . . . . 458 Beacon St., Boston
Professor of Diseases of the Nervous System

HAROLD WILLIAMS, A.B., M.D. * . . . . . 528 Beacon St., Boston
Professor of the Theory and Practice of Medicine, and Dean of the Medical and Dental Schools

HENRY BECKLES CHANDLER, C.M., M.D.
Professor of Ophthalmology 34 1-2 Beacon St., Boston

SAMUEL AUGUSTUS HOPKINS, M.D., D.D.S.
235 Marlborough St., Boston
Professor of the Theory and Practice of Dentistry

HERBERT WARREN WHITE, M.D. . 151 Humboldt Ave., Roxbury
Assistant Professor of the Theory and Practice of Medicine

GARDNER WELD ALLEN, A.B., M.D. 419 Boylston St., Boston
Assistant Professor of Genito-Urinary Surgery

---

* Absent on leave.

WILLIAM LESLIE HOOPER, A.M., PH.D. . . . 124 Professors Row
Professor of Electrical Engineering

JAMES SULLIVAN HOWE, M.D. . . . . 15 Charles St., Boston
Professor of Dermatology

BYRON HOWARD STROUT, D.D.S. . . . . Taunton
Assistant Professor of Operative Technics, and Instructor in Anaesthesia

GARDNER CHACE ANTHONY, A.M. . . . . 14 Professors Row
Professor of Technical Drawing, and Dean of the Department of Engineering

EDWARD WALTER BRANIGAN, D.D.S.
Professor of Clinical Dentistry 2 Commonwealth Ave., Boston

FREDERIC MELANCTHON BRIGGS, A.B., M.D.,
Professor of Surgery 31 Massachusetts Ave., Boston

HOWARD SUMNER DEARING, A.M., M.D. 607 Tremont St., Boston
Assistant Professor of Clinical Medicine

JOSEPH KING KNIGHT, D.D.S. . . . . Hyde Park
Professor of Prosthodontia

FRANK GEORGE WHEATLEY, A.M., M.D. . . . . North Abington
Professor of Materia Medica and Therapeutics

GEORGE ANDREW BATES, D.D.S. . . . . Auburndale
Professor of Histology

EDWARD LAMBERT TWOMBLY, A.B., M.D.
Instructor in Clinical Medicine 406 Massachusetts Ave., Boston

GEORGE HAMLIN WASHBURN, A.B., M.D.
Professor of Obstetrics 377 Marlborough St., Boston

ARTHUR EVERETT AUSTIN, A.B., M.D. 163 Suffolk Road,
Professor of Medical Chemistry and Toxicology Chestnut Hill

GEORGE LYLE MARSHALL, D.D.S. . . . . 5 Bow St., Somerville
Instructor in Prosthetic Dentistry

FRED CARVILL MERRILL, D.D.S. . . . . Wollaston
Instructor in Prosthetic Dentistry

FREDERICK MORTIMER HEMENWAY, D.D.S.
Professor of Prosthetic Dentistry 88 Boylston St., Boston

WILLIAM RICE, D.D.S. . . . . 845 Boylston St., Boston
Instructor in Clinical Dentistry

HORACE DAVID ARNOLD, A.B., M.D. . . . 427 Beacon St., Boston
Professor of Clinical Medicine

WILLIAM PRESTON HOUSTON, D.D.S. . 419 Boylston St., Boston
Instructor in Clinical Dentistry

HENRY HILDRETH PIPER, D.D.S. . . 71 Sycamore St., Somerville
Instructor in Clinical Dentistry

GEORGE ARTHUR WEBSTER, M.D. . . . 419 Boylston St., Boston
Instructor in Otology

KARL AUGUST HOCH, M.D. . . . . MacLean Asylum, Waverley
Instructor in Neuro-Pathology

GEORGE WARTON KAAN, M.D. . . . . 419 Boylston St., Boston
Professor of Clinical Gynaecology

EDWARD MAVERICK PLUMMER, M.D. 5 Adams St., Charlestown
Professor of Otology

EDWARD BINNEY LANE, M.D. . . . . Insane Hospital, Dorchester
Professor of Mental Diseases

JOHN JENKS THOMAS, A.M., M.D. . . . 88 Bay State Road, Boston
Instructor in Neurology

WILLIAM ELISHA CHENERY, A.B., M.D.
Assistant Professor of Laryngology 222 Huntington Ave., Boston

HERBERT ERNEST CUSHMAN, B.D., A.M., PH.D. 28 Professors Row
Professor of Philosophy

LEO RICH LEWIS, A.M. . . . . 20 Professors Row
Professor of the History and Theory of Music

KNUT JOSEPH LUTTROPP, D.D.S., . . . 419 Boylston St., Boston
Demonstrator in Operative Dentistry

DAVID LEE MAULSBY, A.M. . . . . 80 Curtis St.
Professor of English Literature and Oratory

FRANK BERRY SANBORN, C.E., M.S.
Professor of Civil Engineering 10 Buena Vista Park, Cambridge

FRANK WILLIAMS DURKEE, A.M. . . . . 38 Professors Row
Professor of Inorganic Chemistry

JOHN WOOD FORBES, D.D.S. . . . . 419 Boylston St., Boston
Instructor in Clinical Dentistry

EDMUND CHANNING STOWELL, A.B., M.D.
9 Massachusetts Ave., Boston
Assistant Professor of Children's Diseases

RICHARD FITCH CHASE, M.D. . . . 246 Huntington Ave., Boston
Instructor in Clinical Medicine, and Lecturer on Gastro-Intestinal Diseases

THEODORE CHARLES ERB, M.D. . . . 159 St. Botolph St., Boston
Instructor in Obstetrics

ROBERT WORTHINGTON HASTINGS, A.M., M.D.
Instructor in the Theory and Practice of Medicine, and Assistant in Pediatrics The Beaconsfield, Brookline

CHARLES DAVISON KNOWLTON, M.D. . 574 Warren St., Roxbury
Instructor in Pathology and Bacteriology

EUGENE THAYER, A.M., M.D. . . . 2683 Washington St., Roxbury
Demonstrator of Anatomy

GEORGE VAN NESS DEARBORN, A.M., PH.D., M.D.
Assistant Professor of Physiology 150 St. Botolph St., Boston

WARREN FISHER GAY, A.B., M.D. . . 416 Marlborough St., Boston
Instructor in Surgery, and Assistant in Anatomy

EDWARD HENRY ROCKWELL, S.B. 133 Powder House Boulevard,
Assistant Professor of Civil Engineering Somerville

EDWARD ELIPHALET THORPE, M.D. 711 Boylston Street, Boston
Instructor in Medical Chemistry

DANIEL HIRAM CRAIG, M.D. . . . . 158 Newbury St., Boston
Instructor in Clinical Gynaecology

WILLIAM KENDALL DENISON, A.M. . . . . 72 Professors Row
Professor of the Latin Language and Literature

FRANCIS DENNIS DONOGHUE, M.D. 409 Marlborough St., Boston
Instructor in Clinical Surgery

TIMOTHY LEARY, M.D. . . . . 20 Sunset St., Roxbury
Professor of Pathology and Bacteriology

CHARLES FAIRBANK PAINTER, A.B., M.D.
Assistant Professor of Orthopedic Surgery 86 Bay State Road, Boston

JOHN LINCOLN AMES, M.D. . . . . 72 Chestnut St., Boston
Assistant Professor of Clinical Medicine

CHARLES HARRIS CHASE, S.B. . . . . Stoneham
Assistant Professor of Steam Engineering

JOHN INNES FRENCH, M.D. . . . . 2A Park St., Boston
Instructor in Materia Medica and Therapeutics

BURLEIGH CHILDS GILBERT, D.D.S. . . . . Stoneham
Instructor in Clinical Dentistry

RICHARD FROTHINGHAM O'NEIL, A.B., M.D.
416 Marlborough St., Boston
Demonstrator of Surgical Apparatus and Bandaging

HARRY GRAY CHASE, B.S. . . . . 2 Curtis Ave.
Assistant Professor of Physics, and Secretary of the Faculty of Arts and Sciences

ERVIN ARTHUR JOHNSON, D.D.S. . . . 176 Federal St., Boston
Instructor in Clinical Dentistry

JOHN SHEPARD MAY, M.D. . . . . 495 Warren St., Roxbury
Instructor in Obstetrics, and Assistant in Clinical Medicine

ELIZABETH ANGELA RILEY, M.D. . . . . 483 Beacon St., Boston
Instructor in Gynaecology and Abdominal Surgery

FRANK LEE DRUMMOND RUST, M.D. . 543 Boylston St., Boston
Assistant Professor of Ophthalmology

FREDERICK BOOTH STEVENS, D.D.S. . . Everett Sq., Hyde Park
Instructor in Clinical Dentistry

SAMUEL CHANDLER EARLE, A.M.
Assistant Professor of English 9 Electric Avenue, West Somerville

LAWRENCE BOYD EVANS, PH.D. . . . . 2 Dean Hall
Professor of History

HAROLD JOHN TURNER, PH.D. . . 33 Emery St., Medford Hillside
Instructor in Chemistry

JAMES WILLIAM HINCKLEY, M.D. . . 18 Huntington Ave., Boston
Instructor in Obstetrics

FRED DAYTON LAMBERT, A.M., PH.D. Allen House, Tufts College
Instructor in Natural History

HENRY CLAYTON METCALF, A.B., PH.D. . . . 92 Professors Row
Jackson Professor of Political Science

CHARLES CRAWFORD STROUD, A.B., M.D.
Medical Director of the Gymnasium, and Instructor in Physical Training Allen House, Tufts College

CHARLES ST.CLAIR WADE, A.M. . . . . 16 Conwell Ave.
Professor of the Greek Language and Literature

THOMAS WHITTEMORE, A.B. . . . . ΘΔΧ House, Tufts College
Assistant Professor of English, and Instructor in the History of Art

WALTER FORSYTHE WINCHESTER, D.D.S.
Instructor in Prosthetic Dentistry 372 Boylston St., Boston

WILLIAM MARTIN FLYNN, D.D.S. . . 474A Broadway, So. Boston
Instructor in Clinical Dentistry

FRANK GEORGE WREN, A.M. . . . . 16 Dearborn Road
Professor of Mathematics

ELWOOD TRACY EASTON, M.D. . . . . 603 Tremont St., Boston
Instructor in Ophthalmology

OSKAR ECKSTEIN, PH.D., P.D. . . . . 28 Professors Row
Instructor in Chemistry

HORACE SHERIDAN MORAN, M.D. . . . 86 Warren St., Roxbury
Instructor in Obstetrics

HARRY CALDWELL PARKER, M.D. 382 Commonwealth Ave., Boston
Instructor in Ophthalmology

OLGA CUSHING-LEARY, M.D. Cushing Hospital, Roxbury
Instructor in Pathology and Bacteriology

FRANK PERCIVAL WILLIAMS, M.D. . . 419 Boylston St., Boston
Instructor in Rectal Diseases

HARRY HOMER GERMAIN, M.D. . . . . 173 Beacon St., Boston
Instructor in Clinical Surgery

LUTHER GORDON PAUL, M.D. . . . . 10 Exeter St., Boston
Instructor in Clinical Surgery

WILLIAM RICHARD RANSOM, A.M. . . . . 101 Talbot Ave.
Instructor in Mathematics

FREDERICK FINCH STRONG, M.D. . 178 Huntington Ave., Boston
Instructor in Electro-Therapeutics and Haematology

GEORGE FRANCIS ASHLEY . . . . . 11 Laurel St., Somerville
Instructor in Drawing

LIZZIE MAUD CARVILL, A.B. . . . . 28 Highland Ave., Somerville
Instructor in Physical Training for Women

WILLIAM ARNOLD COLWELL, A.M. . 17 Conant Hall, Cambridge
Instructor in German

RALPH WEBSTER RICHARDS, A.M. . . . . 120 Curtis St.
Instructor in Geology

EDWIN BUTLER ROLLINS, B.S. . . . . 1 West Hall
Instructor in Electrical Engineering

CHARLES EDWARD STEWART, S.B.
Instructor in Shopwork 34 Emery St., Medford Hillside

LECTURERS, ASSISTANTS, AND OTHERS

WALTER IRVING BRIGHAM, D.D.S. . . . . South Framingham
Lecturer on Operative Dentistry

WILLIAM EASTMAN FAY, A.B., M.D. 366 Commonwealth Ave., Boston
Assistant in Clinical Medicine

ARTHUR PATTERSON CHADBOURN, A.B., M.D.
Assistant in Clinical Medicine 225 Marlborough St., Boston

CHARLES HENRY WINN, M.D. . . . . 1474 Tremont St., Boston
Assistant in Clinical Medicine

EDWARD ALLEN PEASE, M.D. . . . . 483 Beacon St., Boston
Assistant in Clinical Gynaecology

ELMOND ARTHUR BURNHAM, A.B., M.D.
Assistant in Clinical Medicine 154 Huntington Ave., Boston

ARTHUR WILLARD FAIRBANKS, M.D.
Assistant in Clinical Medicine 362 Commonwealth Ave., Boston

ROBERT MICHAEL MERRICK, M.D. . . 15 Adams St., Dorchester
Assistant in Clinical Medicine

HENRY FOWLER RANSFORD WATTS, M.D.
Assistant in Clinical Medicine 6 Monadnock St., Boston

FREDERICK WARREN PEARL, A.B., M.D.
Instructor in Operative and Clinical Surgery, and Assistant Demonstrator of Anatomy Hotel Vendome, Commonwealth Ave., Boston

CHARLES BALFOUR DARLING, A.B., M.D.
Assistant in Clinical Gynaecology 27 Rockville Park, Roxbury

JOHN PETER TREANOR, M.D. . . . 3 Howes St., Dorchester, Mass.
Assistant in Clinical Medicine

WILLIAM HERBERT GRANT, M.D. . . . 419 Boylston St., Boston
Assistant in Clinical Gynaecology

WILLIAM GRAY ADAMS, M.D. . . . . Hyde Park
Assistant in Anatomy

ISIDORE EUGENE ROSENSTEIN REID, M.B., C.M.
Assistant Demonstrator of Anatomy 84 Boylston St., Jamaica Plain

THOMAS JAMES O'BRIEN, PH.G., M.D. 1470 Tremont St., Roxbury
Assistant in Clinical Medicine

JOSEPH HENRY SAUNDERS, A.B., M.D. 310 Harvard St., Brookline
Assistant in Clinical Medicine

JOHN SCOTT McLEOD, M.D. . . . . 130 Warren St., Roxbury
Assistant in Anatomy

WILLIS JOHNSON MIDDLETON, M.D. 661 Washington St., Quincy
Assistant in Anatomy

ALONZO KINGMAN PAINE, M.D. . . . . 69 Gainsboro St., Boston
Prosector in Anatomy

WILLARD CHUTE PETERS, M.D. . . . . Boston City Hospital
Assistant in Clinical Surgery

ARTHUR THORNTON LEGG, M.D. . . . . 535 Beacon St., Boston
Assistant in Orthopedics

WILLIAM HYDE PRICE, A.M. . . . . 87 Hammond St., Cambridge
Lecturer in Political Science

FREDERICK WINSLOW STETSON, A.B., M.D.
Assistant in Clinical Medicine Columbia Road, Dorchester

PHILIP MESERVE HAYDEN, A.B. . . . . Dean Hall, 6
Instructor in French

ARTHUR MURPHY, JR., A.B. . . . . Dean Hall, 8
Assistant in Chemistry

CHESTER BRADSTREET STORY, A.B., ... Dean Hall, 1
Assistant in English

CHANDLER MASON WOOD, A.M. . . . . West Hall, 19
Assistant in History

JOHN BLACKLER ABBOTT . . . . . East Hall, 1
Assistant in Chemistry

Divinity School

FREDERICK W. HAMILTON, A.M., D.D. . . . . Roxbury
HENRY W. RUGG, D.D. . . . . Providence, R. I.
BYRON GROCE, A.M., LITT.D. . . . . Roxbury
HAROLD WILLIAMS, M.D. . . . . Boston
CHARLES CONKLIN, A.M., B.D. . . . . Boston
Lecturers

Laboratory Assistants

L. MARY-BELLE HOLT, B.L. . . . . Portland, Me.
HORACE G. WHEATON . . . . . Cambridge
CARL R. O'BRIEN . . . . . Chelsea
Anatomy

EDISON W. BROWN . . . . . Dorchester
JOHN M. KELLEY . . . . . Dorchester
LEON S. A. MEDALIA . . . . . Boston
Pathology and Bacteriology

LEO T. MYLES . . . . . Cambridge
FRANKLIN WELLES . . . . . Boston
GUY M. WINSLOW . . . . . Newton
Histology

FREEMAN A. TOWER . . . . . Sterling Junction
MARGARET E. CARLEY . . . . . Winthrop
SYDNEY C. HARDWICK . . . . . Quincy
SOLON W. PETERS . . . . . Sterling
Physiology

LUTHER G. DEARBORN, JR., A.B. . . . . Somerville
CLARK K. PETERSON . . . . . E. Boston
W. DACRE WALKER . . . . . Peabody
FRANK W. ROGERS . . . . . Dedham
CHARLES H. YOUNG . . . . . Woburn
Medical Chemistry

THOMAS W. MURPHY . . . . . Lawrence
ADELINE F. DUNHAM . . . . . Boston
CORNELIUS A. SULLIVAN . . . . . Everett
JOSEPH A. MEEHAN . . . . . Lowell
CUSHMAN DAY . . . . . Boston
General Chemistry

JOHN J. GIBBONS . . . . . Clinton
WILLIAM A. DUTCHER . . . . . Boston
Pharmacology

Other Officers

MARY WRIGHT RICHARDSON . . . . . Boston
Clerk in Dental Infirmary

SARAH ELIZABETH MILLER . . . . . Boston
Clerk in the Prosthetic Department

FRANCES WILDER . . . . . Boston
Matron in the Dental Operating Room

OTHER OFFICERS

HERBERT TRUE BROWN . . . . . Tufts College
Bursar

HARRY GRAY CHASE, B.S. . . . . 2 Curtis Ave.
Registrar

HELEN LOUISE MELLEN . . . . . 126 Packard Ave.
Librarian

ETHEL MUNROE HAYES, A.B. . . . . 252 Medford St.
Assistant Librarian

KATHARINE LOUISE STEBBINS, A.B. . . . . 30 Day St.
Assistant to the Secretary of the College of Letters

CHARLES CRAWFORD STROUD, A.B., M.D.
Director of the Gymnasium Allen House, Sawyer Avenue

SHERBURNE HILL . . . . . Δ Υ House
Assistant in Physical Training

EDWIN HENRY BENNETT . . . . . 16 Lovell St.
Superintendent of Buildings

MRS. HARRIET ANNA TURNER
Matron of Metcalf Hall

MRS. JENNIE LOUISE PUFFER
Matron of Start House

Proctors

CHANDLER M. WOOD . . . . . West Hall, 19
EDWIN B. ROLLINS . . . . . West Hall, 4
PHILIP M. HAYDEN . . . . . Dean Hall, 6
FRED W. THYNG . . . . . East Hall, 11

Russell Lecturer, 1904

HERBERT ERNEST CUSHMAN, PH.D. . . . . Tufts College

TUFTS COLLEGE STUDIES

Board of Editors

THE PRESIDENT, *Ex-Officio*

Professor Wade — Professor Dolbear
Professor Knight — Professor Kingsley

CURATORS OF BUILDINGS

Chapel . . . . . Professor Lewis
Ballou Hall . . . . . Professor H. G. Chase
Barnum Museum . . . . . Professor Kingsley
Gymnasium . . . . . Dr. Stroud
Miner Hall . . . . . Dean Leonard
Library . . . . . Miss Mellen
Robinson Hall . . . . . Professor Hooper
Chemical Laboratory . . . . . Professor Michael
Bromfield-Pearson Building . . . . . Professor Anthony

Standing Committees

OF THE FACULTY OF ARTS AND SCIENCES *

ADMISSIONS: Professor Denison, *Chairman;* Deans Shipman, Anthony, and Leonard; Sec'y H. G. Chase; Professors Wade, Fay, Lewis, Maulsby, Evans, Wren, Durkee, Dolbear, and Kingsley.

ABSENCES AND PETITIONS: Dean Shipman, *Chairman;* Deans Leonard and Anthony; Sec'y H. G. Chase.

SCHOLARSHIPS AND AIDS: President Capen, *Chairman;* Deans Shipman, Anthony, and Leonard; Sec'y H. G. Chase.

LIBRARY: Dean Shipman, *Chairman;* Professors Hooper, Knight, Metcalf, and Wade.

PROGRAM: Professor Lewis, *Chairman;* Professors Anthony and Knight, Assistant Professor H. G. Chase.

EXAMINATIONS: Professor Metcalf, *Chairman;* Professors Anthony and Denison.

CATALOGUE: Professor Maulsby, *Chairman;* Professor Anthony, and Dr. Williams (of the Medical School).

BOOKS AND SUPPLIES: Professor Lewis, *Chairman;* Professors Durkee, Anthony, and Wren.

MEMBERS ON THE PART OF THE FACULTY OF ARTS AND SCIENCES OF THE BOARD OF DIRECTORS OF ATHLETICS: Professor Wren, *Chairman;* Dr. Stroud, and Professor Harmon.

STUDENT ORGANIZATIONS: Professor Lewis, *Chairman;* Professors Knight, Denison, and Hooper, and Dr. Stroud.

INFORMATION: Professor Cushman, *Chairman;* Professors Denison and Wren.

USE OF COLLEGE BUILDINGS: Professor Hooper, *Chairman;* Professors Wren and Leonard, and Dr. Stroud.

* The Faculty of Arts and Sciences consists of the Faculties of the College of Letters, the Department of Engineering, the Graduate Department, and the Divinity School, constituting one body for the discharge of certain administrative functions.

THE
COLLEGE OF LETTERS

Faculty of the College of Letters

ELMER H. CAPEN, A.M., D.D., LL.D., PRESIDENT
Professor of Moral Philosophy and Political Economy

WILLIAM R. SHIPMAN, A.M., D.D., LL.D., DEAN
Goldthwaite Professor of Rhetoric, and Professor of Logic

HARRY G. CHASE, B.S., SECRETARY
Assistant Professor of Physics

CHARLES H. LEONARD, A.M., D.D.
Goddard Professor of Homiletics and Pastoral Theology

JEROME SCHNEIDER, PH.D.
Professor of Greek

EDWIN C. BOLLES, PH.D., D.D.
Dickson Professor of English and American History

BENJAMIN G. BROWN, A.M.*
Walker Professor of Mathematics

AMOS E. DOLBEAR, M.E., PH.D., LL.D.
Professor of Physics and Astronomy

GEORGE M. HARMON, A.M., D.D.
Professor of Biblical Theology

CHARLES E. FAY, A.M., LITT.D.
Wade Professor of Modern Languages

WILLIAM G. TOUSEY, A.M., D.D.
Professor of Ethics and the Philosophy of Theism

GEORGE T. KNIGHT, A.M., D.D.
Packard Professor of Christian Theology

WARREN S. WOODBRIDGE, B.D., A.M.
Woodbridge Professor of Applied Christianity

J. STERLING KINGSLEY, S.D.
Professor of Biology

ARTHUR MICHAEL, A.M., PH.D.
Professor of Chemistry

*Deceased.

HERBERT E. CUSHMAN, B.D., A.M., PH.D.
Professor of Philosophy

LEO R. LEWIS, A.M.
Professor of the History and Theory of Music

DAVID L. MAULSBY, A.M.
Professor of English Literature and Oratory

FRANK B. SANBORN, C.E., M.S.
Professor of Civil Engineering

FRANK W. DURKEE, A.M.
Professor of Inorganic Chemistry

WILLIAM K. DENISON, A.M.
Professor of the Latin Language and Literature

LAWRENCE B. EVANS, PH.D.
Professor of History.

HENRY C. METCALF, A.B., PH.D.
Jackson Professor of Political Science

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

FRANK G. WREN, A.M.
Professor of Mathematics

THOMAS WHITTEMORE, A.B.
Assistant Professor of English, and Instructor in the History of Art

WILLIAM R. RANSOM, A.M.
Assistant Professor of Mathematics

FRED D. LAMBERT, A.M., PH.D.
Instructor in Natural History

CHARLES C. STROUD, A.B., M.D.
Instructor in Physical Training

WILLIAM A. COLWELL, A.M.
Instructor in German

RALPH W. RICHARDS, A.M.
Instructor in Geology

OSKAR ECKSTEIN, PH.D., P.D.
Instructor in Chemistry

OTHER INSTRUCTORS

HAROLD J. TURNER, PH.D.
Instructor in Chemistry.

LIZZIE MAUD CARVILL, A.B.
Instructor in Physical Training for Women

WILLIAM H. PRICE, A.B.
Lecturer in Political Science

SHERBURNE HILL
Assistant in Physical Training

JOHN B. ABBOTT
Assistant in Chemistry

ARTHUR MURPHY JR., A.B.
Assistant in Chemistry

CHESTER B. STORY, A.B.
Assistant in English

CHANDLER M. WOOD, A.M.
Assistant in History

COMMITTEE ON PROMOTIONS

Dean Shipman, *Chairman;* Professors Knight, Durkee, Wade, and Denison.

Requirements for Admission

Candidates will be admitted to the College of Letters on passing an examination in two groups of subjects, known respectively as the Primary and the Secondary Group.

Candidates for the degree of Bachelor of Arts and of Bachelor of Divinity will be admitted to the College of Letters on passing an examination in two groups of subjects, known respectively as the Primary and the Secondary Group:—

The Primary Group *

Elementary English;
An Elementary Foreign Language, ancient or modern;
Elementary History;
Elementary Mathematics.

From a list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group, aggregating *fourteen* units for the course in arts and *six* for each of the courses in science, subject only to the following limitations:—

1. The fourteen units for the course in arts shall include those representing one advanced ancient language.

2. No subject classified as "advanced" shall be offered without the corresponding elementary subject; nor shall any language subject be counted as "elementary" in both the Primary and the Secondary Group.

* For detailed statement of the requirements in the Primary and the Secondary Group, see pages 43 to 53.

The Secondary subjects and their assigned units are as follows: —

The Secondary Group

ELEMENTARY	ADVANCED
Greek, 4	English, 2
Latin, 6	Greek, 2
French, 4	Latin, 2
German, 4	French, 2
Chemistry, 1	German, 2
Physics, 1	History, 2
Botany, 1 or 2	Advanced Algebra, 1
Zoology, 1 or 2	Trigonometry, 1
Geology, 1 or 2	Solid Geometry, 1
Physiology, 1 or 2	Chemistry, 2
	Physics, 2

Candidates for admission to the Engineering Department must have received adequate preparation in certain required subjects, as follows:—

Engineering: the Primary Group

Elementary English;
*One Elementary Foreign Language;
Algebra;
Plane and Solid Geometry.

From the following list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group aggregating three units:—

Engineering: the Secondary Group

Elementary History, 2	Mechanical Drawing, 1
Chemistry, 1 or 2	Freehand Drawing, 1
Physics, 1 or 2	Shop Work, 1

Detailed Information concerning the amount and character of the work demanded in preparation will be found on pages 41 to 51.

* Students will find it an advantage to present both French and German. Preparatory work in Modern Languages above the entrance requirements may be counted toward the degree of B.S. in engineering on the conditions stated on page 142.

The Primary Group

I. Elementary English.*

1. *Reading and Practice.*—A certain number of books will be set for reading. The candidate will be required to present evidence of a general knowledge of the subject matter, and to answer simple questions on the lives of the authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and will call for only a general knowledge of the books. In place of a part or the whole of this test, the candidate may be allowed to present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

The books set for this part of the examination will be:—

For 1903, 1904, 1905.—Shakespeare's Merchant of Venice and Julius Caesar; the Sir Roger de Coverley Papers in the Spectator; Goldsmith's Vicar of Wakefield; Coleridge's Rime of the Ancient Mariner; Scott's Ivanhoe; Carlyle's Essay on Burns; Tennyson's Princess; Lowell's Vision of Sir Launfal; George Eliot's Silas Marner.

For 1906, 1907, 1908.—Shakespeare's Macbeth and the Merchant of Venice; The Sir Roger de Coverley Papers in The Spectator; Irving's Life of Goldsmith; Coleridge's The Ancient Mariner; Scott's Ivanhoe and The Lady of the Lake; Tennyson's The Passing of Arthur, and one of the three Idyls, Elaine, or Enid, or Gareth and Lynette; Lowell's The Vision of Sir Launfal; George Eliot's Silas Marner.

2. *Study and Practice.*—This part of the examination presupposes the more careful study of each of the works named below. The examination will be upon subject-matter, form, and structure; and will also test the candidate's ability to ex-

* No candidate will be accepted in English whose work is notably defective in point of spelling, punctuation, syntax, idiom, or division into paragraphs.

press his knowledge with clearness and accuracy. The books set for this part of the examination will be:—

For 1903, 1904, 1905.— Shakespeare's Macbeth; Milton's L'Allegro, Il Penseroso, Comus, and Lycidas; Burke's Speech on Conciliation with America; Macaulay's Essays on Milton and Addison.

For 1906, 1907, 1908.—Shakespeare's Julius Caesar; Milton's L'Allegro, Il Penseroso, Comus, and Lycidas; Burke's Speech on Conciliation with America; Macaulay's Essays on Milton and Addison; Lincoln's Gettysburg Address.

II. One of the following Languages:

1. ELEMENTARY GERMAN.

The elementary examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *two* years. It will consist of two parts, which may be taken separately:—

(*a*) The translation at sight of ordinary German. In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least two hundred pages of classical and contemporary prose and verse, to be selected from such works as the following: Riel, *Kulturgeschichtliche Novellen;* Freytag, *Bilder aus der deutschen Vergangenheit*, especially *Aus dem Mittelalter* and *Aus dem Jahrhundert des groszen Krieges;* Kohlrausch, *Das Jahr* 1813; Schiller, *Der dreiszigjährige Krieg, Wilhelm Tell, Maria Stuart, Die Jungfrau von Orleans;* Goethe, *Hermann und Dorothea, Egmont, Iphigenie;* Lessing, *Minna von Barnhelm.* At least one-half of the amount read should be nineteenth-century prose. It is important that all the translation should be done into clear and idiomatic English.

(*b*) The translation into German of a passage of simple English prose.

A less extended knowledge of syntax than for advanced

German (see the Secondary Group) will be presupposed in the selection of the matter for translation.

2. ELEMENTARY FRENCH.

The elementary examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *two* years. It will consist of two parts, which may be taken separately:—

(*a*) The translation at sight of ordinary French. The passages set for translation will be suited to candidates who have read not less than five hundred duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors. It is important that all the translation should be done into clear and idiomatic English.

(*b*) The translation into French of a passage of easy English.

A less extended knowledge of syntax than for Advanced French (see the Secondary Group) will be presupposed in the selection of matter for translation.

3. ELEMENTARY LATIN.

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for three years. It will consist of two parts:—

(*a*) The translation at sight of passages of Latin prose and verse. The passages must be rendered into simple and idiomatic English.

(*b*) A thorough examination on Cicero's Orations against Catiline, II, III, IV, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms. This test will consist in part in writing simple Latin prose, involving words, constructions, and idioms found in the prescribed speeches.

The reading in preparation for Elementary Latin should include Caesar's Gallic War (Books I—IV), Cicero's four orations against Catiline, two thousand or more lines of Vergil, or of Ovid and Vergil. Equivalents will be accepted, but prose must not be substituted for verse.

4. ELEMENTARY GREEK.

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course of at least five periods a week for two years. It will consist of two parts, which cannot be taken separately:—

(*a*) The translation at sight of passages of simple Attic prose.

(*b*) A thorough examination on Book II of Xenophon's Anabasis, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms of the language.

Before taking the elementary examination the candidate should have read, in addition to the usual grammar work, at least four books of Xenophon's Anabasis, or an equivalent.

III. Elementary History.

Either 1 and 2, or 3 and 4, of the following:—

1. The history of Greece to the death of Alexander, with due reference to Greek life, literature, and art, as treated in the histories of Botsford, Oman, West, or Myers.

2. The history of Rome to the accession of Commodus, with due reference to Roman literature and government. Such texts as those of Morey, Botsford, West, or Allen will indicate the character of the work desired.

While the periods indicated above will be accepted as satisfying the entrance requirements in ancient history, it is strongly recommended that the study of the history of Greece be continued to the conquest of Greece by Rome, and that the history of Rome be pursued to the fall of the Western Empire.

This does not necessarily imply any increase in the time devoted to Greek and Roman history.

3. The history of England, with due reference to social and political development. Larned's History of England and Montgomery's Leading Facts of English History will indicate the character of the work expected.

4. The history and government of the United States.

Such texts as McLaughlin's History of the American Nation, Johnston's or Channing's History of the United States, and Fiske's Civil Government should be used.

It is recommended that students seeking admission to the College should offer Greek and Roman history rather than English and American history.

The elementary requirement in history implies one year's work of not less than five periods a week. Work in the text-book should be constantly accompanied by collateral reading. The attention of teachers is called to the Report of the Committee of Seven, published by the Macmillan Company, New York, under the title, "The Study of History in Schools."

IV. Elementary Mathematics.

A knowledge of the metric system, and ability to perform accurately the ordinary processes of arithmetic, are presumed. The examination will include:—

(*a*) Algebra, through quadratic equations, arithmetical and geometric progressions, ratio and proportion, and the binomial theorem for positive integral exponents; also

(*b*) Plane Geometry, including the solution of simple original exercises and numerical problems.

The Secondary Group

The subjects and their values in entrance units are as follows:—

I. Advanced English. *Two entrance units.*

One of the following:—

1. A detailed study of a single period of English literature, and of not fewer than three authors belonging to it.

2. Old English (Anglo-Saxon): chiefly simple prose and grammar.

3. Chaucer: Prologue, Knight's Tale, and Nun's Priest's Tale, including vocabulary, inflection, and prosody.

II. Elementary German. *Four entrance units.*

Primary Group, II, 1, when not offered in the Primary Group.

III. Elementary French. *Four entrance units.*

Primary Group, II, 2, when not offered in the Primary Group.

IV. Elementary Latin. *Six entrance units.*

Primary Group, II, 3, when not offered in the Primary Group.

V. Elementary Greek. *Four entrance units.*

Primary Group, II, 4, when not offered in the Primary Group.

VI. Advanced German. *Two entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *three* years. It will consist of two parts, which may be taken separately:

(*a*) The translation at sight of standard German.

In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least five hundred pages of classical and contemporary prose and verse, to be selected from such works as those enumerated in Primary Group, II, 1, Elementary German (*a*). At least one-half of the amount read should be nineteenth-century prose.

(*b*) The translation into German of a passage of easy English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, the elements of word-formation, and the principal uses of prepositions and conjunctions; the essentials of syntax, especially the uses of modal auxiliaries and the subjunctive and infinitive modes. Proficiency may also be tested by direct questioning.

It is recommended that the candidate acquire the ability to

follow a recitation conducted in German and to answer in that language questions asked by the instructor.

VII. Advanced French. *Two entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *three* years. It will consist of two parts, which may be taken separately:—

(*a*) The translation at sight of standard French.

The passages set for translation will be suited to candidates who have read not less than one thousand duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors.

(*b*) The translation into French of a passage of English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, and a familiarity with the essentials of French syntax, especially the uses of modes and tenses, and also with the commoner idiomatic phrases. Proficiency may also be tested by direct questioning.

Careful attention should be paid to pronunciation and to the use of spoken French, that the candidate may at least acquire the ability to follow a recitation conducted in the language and to answer questions asked by the instructor.

VIII. Advanced Latin. *Two entrance units.*

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for four years. It will consist of two parts:—

(*a*) The translation at sight of passages of Latin prose and verse, with questions on the ordinary forms, constructions, and idioms, and on prosody. Simple and idiomatic English must be used in the translations.

(*b*) The translation into Latin prose of a passage of connected narrative.

The reading in preparation for advanced Latin should in-

clude Caesar's Gallic War (Books I—IV); Cicero, seven orations, or six if the Manilian Law be included; Vergil and Ovid, six to ten thousand lines, including the first six books of the Aeneid. Equivalents will be accepted, but prose must not be substituted for verse.

A more extended knowledge of grammar will be expected than in the case of Elementary Latin. Practice in reading at sight, and a general training in the proper methods of reading, should form an important part of the preparation, from the very first.

IX. Advanced Greek. *Two entrance units.*

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course of five exercises a week, extending through at least three school years. The two parts of the examination may be taken separately:—

(*a*) The translation at sight of an average passage of Homer; with questions on ordinary forms, constructions, and idioms, and on prosody.

(*b*) The translation into Attic prose of a passage of connected English narrative. The passage set for translation will be based on some portion of the Greek prose works usually read in preparation for college.

Before taking the examination in Advanced Greek the candidate should have completed at least four books of Xenophon's Anabasis, or their equivalent in Attic prose, and six books in Homer's Iliad, or their equivalent in the Odyssey. It is recommended that Greek composition accompany all stages of the preparation, and that the pupil be practiced in reading Greek aloud from the beginning of his course.

X. Advanced History. *Two entrance units.*

One of the following:—

1. The History of Greece and Rome, as described on page 46, for those only who have offered English and American History as primary subjects.

2. The History of England and the United States, as described on page 46, for those only who have offered Greek and Roman History as primary subjects.

3. The History of Europe, taking France or Germany as the central object of study, from the Germanic invasions to 1648.

4. Any one of the primary subjects not offered as such, combined with a detailed study of a limited period within that field.

Each of these subjects requires one year's study of not less than five recitation-periods a week. Equivalents for the subjects outlined above will be accepted.

XI. Advanced Mathematics.

1. Plane Trigonometry, with its applications. *One entrance unit.*
2. Solid Geometry. *One entrance unit.*
3. Advanced Algebra. *One entrance unit.*

XII. Physics.

(*a*) ELEMENTARY. *One entrance unit.* The examination will be upon such elementary text-books as Gage's, Avery's, or Dolbear's, with emphasis upon Mechanics and Energy.

(*b*) ADVANCED. *Two entrance units.* In addition to (*a*), the candidate is required to present satisfactory evidence, by both certificate and record-book, of having completed a year's course of laboratory experiments in physics, of such grade as in Hall and Burgin's Text Book of Physics.

XIII. Chemistry.

(*a*) ELEMENTARY. *One entrance unit.* Preparation for this requirement presupposes a course in general inorganic chemistry (the non-metals) of not less than four periods a week for a year, in amount equal to that in An Introduction to the Study of Chemistry, by Ira Remsen, with experimental work in the non-metals equal in amount to that in Remsen's or Williams's Laboratory Manual. The experiments are to be performed by the students. It is well to present a certified laboratory note-book.

(*b*) ADVANCED. *Two entrance units.* The advanced requirement includes general inorganic chemistry, as in the elementary requirement, and in addition a course of not less than four periods a week for one year, devoted to the study of the metals. The amount must be equal to that in Remsen's text-book men-

tioned above, and involve experiments with the metals and their compounds, covering the ground of and equal in number to those in one of the above-mentioned laboratory manuals. Students who have passed the advanced requirement may elect Chemistry 2; but before taking Chemistry 11 and 12 they will be required to take Chemistry 1, omitting the laboratory work, or to pass a satisfactory examination thereon.

XIV. Natural History. *One or two entrance units.*

In Natural History the examiners give more weight to the character of the work than to the time spent; but at least five periods a week for half a year must have been given to each subject presented, and of this at least half should be devoted to laboratory work. Certified copies of laboratory note-books must be presented. In Botany and Zoology the work should be on structural lines, and detailed study should have been made of at least ten types. Little credit will be allowed for time spent in the analysis of plants or the identification of birds or insects. The following are the subjects which may be presented for admission, the names of the authors of text-books in connection with each being an index of the character of the work expected. Each subject is awarded one or two units, but not more than two subjects will be accepted.

1. Botany: Atkinson, Bergen, Bessey, Campbell, Coulter, Setchell, Spaulding.
2. Zoology: Boyer, Colton, Kellogg, Kingsley, Needham.
3. Physiology: Huxley, Martin, Peabody.
4. Geology: Dana, Leconte, Scott, Tarr.

XV. Freehand Drawing. *One entrance unit.*

The examiner requires evidence of ability to make an accurate outline or shaded drawing from a group of geometric models, or a shaded drawing from a simple cast. Such a knowledge of the fundamental principles of perspective is required as shall enable the student to draw a simple geometric figure without the use of a model. Certified drawings must be submitted, and the student may be examined on all points in doubt.

XVI. Mechanical Drawing. *One entrance unit.*

Accuracy and neatness in drawing is of the first importance, and no amount of work will make amends for neglect in this respect. The student must be familiar with the use of ordinary instruments, and able to solve geometrical problems with accuracy and rapidity. He must also be practiced in the drawing of the ellipse, the parabola, and the hyperbola, and have an elementary knowledge of projection. The suggested course is included in the first fifty-seven pages of Anthony's Elements of Mechanical Drawing. Certified work of the student must be presented, and he may be examined on all points in doubt.

Advanced standing is given in this subject only on examination.

XVII. Shopwork. *One entrance unit.*

The applicant should present satisfactory evidence of familiarity with tools and materials used in the ordinary processes of Wood-work, or Metal-work.

Wood-work includes carpentry, turning, and pattern work. It requires a thorough knowledge of the sharpening, adjustment, and use of the tools, and ability to work from drawings.

Metal-work includes chipping, filing, and the use of machine tools, at the bench and the lathe. Whenever possible, the applicant should present models made by himself and certified by his instructor.

Advanced study is given in this subject only on examination.

GENERAL INFORMATION RELATING TO ADMISSION

The regular examination for admission begins on the day after Commencement, and continues through the two following days. A second examination is held on the Monday, Tuesday, and Wednesday preceding the beginning of the College year.

The examination begins at 9 o'clock A.M. on each of these days. The assignment of examination subjects appears in the calendar, pages 6 and 7.

At the regular examination in June those who will be candi-

dates for admission to the Freshman class one or two years later may present themselves for examination in the subjects of the Primary Group, and in others upon which their teachers may certify that they are adequately prepared. They will receive certificates of the subjects in which they pass, such subjects to be credited to them when they appear for their final examinations.

For admission to advanced standing an examination must be well sustained both in the preparatory studies and in the studies in which the candidate desires credit for advanced standing.

Students entering on examination are required to register at the office of the Registrar before taking their examinations. Those entering on certificate are required to register before noon on the opening day of the College year.

A fee of five dollars must be paid in advance by every candidate who is examined at any other place than the College.

Admission by Certificate.—Certificates covering the preparatory work of candidates for admission are received in lieu of examination from schools of New England that have been approved by the New England College Entrance Certificate Board, and from such others as have filed with the Secretary of the Faculty statements of their courses of study and of their teaching force, and have been approved by the Faculty. Each certificate must cover a preparatory course of not less than four full years of school work, which must have been in approved schools, though not necessarily continuously in one school. It must contain complete answers to such questions as may be proposed by the several examiners.

Certificates should be in the hands of the Registrar of the College at least one month before the opening of the College year.

Blank forms for certificates will be sent upon request made to the *Registrar of the College, Tufts College, Massachusetts.*

☞Beginning January 1, 1904, certificates from New England schools will be accepted only from those schools that have been approved by the New England College Entrance Certificate Board. The institutions represented upon the board are Amherst College, Boston University, Bowdoin College, Brown University, Dartmouth College, Mount Holyoke College, Smith College, Tufts College, the University of Maine, Wellesley College, and Wesleyan University. Application for recognition upon the list of approved schools, when made to the Faculty of Tufts College, will be referred to the *Secretary of the Board, Professor N. F. Davis, 159 Brown St., Providence, R. I.*

Requirements for Degrees

Students may enter upon their work in the courses of Liberal Arts as candidates for the degree of Bachelor of Arts, or Bachelor of Science. In any case the ground of promotion and of graduation is the intellectual attainment of the individual student, not a fixed requirement of a certain number of years of study.

The plan of study offered to the student is at once liberal, controlled, and elastic. It combines the essentials of the general culture which is the prime object of the undergraduate college course with an opportunity for the development of the individual on the lines to which he is especially adapted, and for preparation looking to university and professional study. Students determine the general direction of their work by the choice of major department. They are thereby brought into personal advisory relations with their respective major instructors, under whose guidance they arrange their programs with reference to their individual needs and aims. All work actually accomplished by the student in regular standing counts toward the attainment of the degree. The period within which the degree may be attained depends upon the industry and ability of the individual student.

SYNOPSIS OF THE REQUIREMENTS FOR A.B.*

(1) The requirement for the degree of Bachelor of Arts is the satisfactory completion of subjects aggregating one hundred and twenty-eight term hours.

* Each department offers a series of subjects for study. The unit indicating the requirements is the *term hour*, which represents a subject pursued one hour a week for one half-year. Thus a subject calling for three hours a week for one term represents a requirement of three term hours; if it calls for three hours a week for one year, or two terms, the requirement in that subject is six term hours.

(2) The program of prescribed studies is as follows:—

	Term Hours
LANGUAGES (Latin, Greek, French, German, Hebrew: each student to take *three*)	18
ENGLISH	6
MATHEMATICS	6
PHYSICAL SCIENCE (Physics, Chemistry, Biology; each student to take *one or two*)	12
MENTAL AND MORAL SCIENCE* (each student to take *three*)	12
PHYSICAL TRAINING	2
A total of	56

The requirements are by groups, not by special subjects, and in each group except English and Physical Training some choice is allowed the student.

(3) The program of the student in the first year will be made up from the prescribed groups.

(4) At the end of the first year the student is required to choose a major department, in which he must complete, before graduation, work amounting to eighteen term hours. He may offer work already done in that subject in some one of the prescribed groups as a part of the eighteen hours which he is required to give to his major department, but no subject indicated in the catalogue as elementary can be counted in such work.

(5) The student shall further complete eighteen term hours in subjects designated as collateral with his major subject; that is, subjects tending to strengthen and assist his work in his major.

(6) The remaining term hours of the required aggregate are to be made up by the election of the student from the various subjects offered, limited only by special restrictions applied to certain subjects. The number of the remaining term hours is thirty-six, unless, as occasionally happens, the same work counts

* Of the five subjects, Logic, the History of Philosophy, Political Science, History, and Public Law, the student must take at least three—three term hours of each. The remaining three term hours may be chosen from the two other subjects or from the advanced work in the three subjects at first selected.

both as prescribed and as major work. In such case, the number of elective hours is proportionately increased.

(7) Upon the satisfactory completion of the aggregate requirement, the student is entitled to receive the Bachelor's degree, but no student shall be granted a degree in less than four years of residence, unless he shall have obtained Grade B as an average for his entire work.

Summary

	TERM HOURS
Prescribed work	56
Major department	18
Collateral subjects	18
Elective *	36
	128

For B.S.

The requirement for the degree of Bachelor of Science is the satisfactory completion of one hundred and twenty-eight term hours, according to the program for the General Science Course, the Special Course in Biology or in Chemistry, and the Medical Preparatory Course. The specialized character of these courses leaves only a small allowance of time outside the prescribed subjects for free election.

The requirements for the degree of Bachelor of Science in Engineering are given in connection with the detailed statement of the Department of Engineering.

* An acceptable Commencement part counts as an elective in the second half of the Senior year. See also the second half of paragraph (6), above.

BALLOU HALL

Departments of Instruction

MAJOR DEPARTMENTS

Any of the following may be chosen as major departments:

ENGLISH	POLITICAL SCIENCE
GERMAN	MATHEMATICS
FRENCH	PHYSICS
LATIN	CHEMISTRY
GREEK	BIOLOGY
PHILOSOPHY	ENGINEERING
HISTORY AND PUBLIC LAW	

In the subjoined statement of the subjects offered in the different departments, the name of the major instructor is that given at the head of each department that offers major work. In other cases the name is given of the instructor in general charge of the department. When two or more names appear, major students will be guided by the usage of the department. Names of instructors in charge of each subject are appended to the brief statement of the subject itself.

Subjects enclosed in brackets will not be given during the current year. In many cases alternates are indicated, which fill their places in the program for this year. Subjects count in term hours equivalent to the number of program hours a week assigned to each subject, unless otherwise indicated. Subjects not described as half-yearly extend through both terms. Subjects that continue through only one half-year are indicated by figures in parenthesis following the proposed hour: thus (1) means "first half-year," (2) means "second half-year."

Subjects marked with an asterisk (*) will not be counted for honors. Subjects marked with a double asterisk (**) will be counted for honors only when special conditions are complied with.

A tabular view of the program of hours accompanies the subjoined statement of the several departments. No two subjects assigned to the same hour can be taken simultaneously by any student.

ENGLISH

PROFESSOR SHIPMAN, PROFESSOR MAULSBY, AND ASSISTANT PROFESSOR WHITTEMORE

The work of the department of English includes the theory and practice of composition and the study of literature.

English is required for one year or six term hours. In the first half of the first year the purpose of the instruction in composition is to aid the student to write with clearness and correctness. The aim is also to teach the other fundamentals of rhetoric. In the second half-year the general subject of expression is considered, with special reference to English composition.

In the study of literature, intelligent appreciation of the author's thought and of his characteristic mode of expression is the immediate result held in view. Biographical and philological details, the effect of environment, and the mass of published criticism that clusters about the great names are not neglected, although given a subordinate place. The method at first pursued demands attentive reading of more than can be considered in the class-room, frequent written expression of literary judgment, and occasional investigation of topics not otherwise treated. The library contains multiple copies of many of the authors read. Whether or not the period studied makes special study of linguistic forms necessary, in all subjects the thought-content is regarded as of prime importance. In literary subjects, composition is required as an essential part of the work.

SUBJECTS

*1. The Theory and Practice of Composition. Lectures, themes, conferences. *Tu., Th., Sat., 10.45.* (1)

PROFESSOR MAULSBY AND MR. STORY.

*2. A Study of Expression. Lectures, readings, themes, conferences. *Tu., Th., Sat., 10.45.* (2)

ASSISTANT PROFESSOR WHITTEMORE AND MR. STORY.

*8. The Theory and Practice of Composition. Text-book, themes, conferences. *Three hours, to be arranged.* (1) PROFESSOR SHIPMAN.

English 8 is designed for students who fail to do satisfactory work in English 1 and 2.

*5. Argumentative Composition, a study of its requirements as observed by successful writers, with constant practice by the student. *Tu., Th., 3.00.* (1) *Counting as three hours.* PROFESSOR SHIPMAN.

7. English Versification. Study of poetic forms and practice in poetic composition. *Tu., Th., Sat., 10.45.* (2) PROFESSOR MAULSBY.

[10. The English Bible. *Mon., Wed., Fri., 11.45.* ASSISTANT PROFESSOR WHITTEMORE.]

[*11. General View of English Literature. Lectures, papers, and required reading. *Mon., Fri., 2.00.* PROFESSOR MAULSBY, ASSISTANT PROFESSOR WHITTEMORE, AND PROFESSOR KNIGHT.]

English 11 is designed as an introduction to the study of special periods.

[**12. American Literature. Lectures, required reading, special topics, essays. *Mon., Wed., Fri., 2.00.* PROFESSOR MAULSBY.]

English 12 will be given in 1904-1905.

13. The English Romantic Movement in Poetry. Lectures, reading, brief critical essays. *Tu., Th., Sat., 8.45.* (1) PROFESSOR MAULSBY.

14. Poets of the Victorian Era. Lectures, reading, individual treatment of authors not studied in the class. *Tu., Th., Sat., 8.45.* (2) PROFESSOR MAULSBY.

15. Prose of the Nineteenth Century. Lectures, reading, brief critical essays. *Mon., Wed., Fri., 11.45.* ASSISTANT PROFESSOR WHITTEMORE.

16. Milton and his Time. Lectures, readings, brief critical essays. *Tu., Th., Sat., 10.45.* (1) ASSISTANT PROFESSOR WHITTEMORE.

[17. Shakespeare. Reading of selected plays, lectures, brief critical essays. *Mon., Wed., Fri., 8.45.* (1) PROFESSOR MAULSBY.]

[18. Shakespeare. Reading of selected plays, lectures, brief critical essays. *Mon., Wed., Fri., 8.45.* (2) ASSISTANT PROFESSOR WHITTEMORE.]

English 17 should precede English 18.

19. Chaucer. Study of forms and pronunciation, reading of selections from the Canterbury Tales and the minor poems. *Mon., Wed., Fri., 10.45.* PROFESSOR MAULSBY.

English 19 may be dropped at the end of the first half-year.

[**20. Anglo-Saxon. Study of the grammar, and the reading of prose selections, during the first half-year. During the second half-year, Beowulf will be read. *Mon., Wed., Fri., 10.45.* PROFESSOR MAULSBY.]

English 20 may be dropped at the end of the first half-year.

23. The Short Story. Examples, and composition. *First half-year. Counting as three hours.* ASSISTANT PROFESSOR WHITTEMORE.

24. History of English Criticism. Discussion, essays. *Tu., Th., Sat., 11.45.* (2) PROFESSOR SHIPMAN.

25. Development of the English Drama. *Mon., Wed., Fri., 9.45.* PROFESSOR MAULSBY.

[26. Development of the English Novel, in the eighteenth and nineteenth centuries. *Mon., Wed., Fri., 9.45.* PROFESSOR MAULSBY.]

27. Homiletics. The Idea and Structure of the Sermon. Homiletic analysis of texts taken from the Bible; study of the sermons of eminent preachers with respect to literary form, expression, and range of illustration. Helps to sermon-preparation from studies in character and literature. *Tu., Th., Sat., 11.45.* PROFESSOR LEONARD.

[28. Seminary in English Literature.]

ORATORY

ASSISTANT PROFESSOR WHITTEMORE

It is intended that the study of oratory shall be of practical benefit to the general student, whether or not he looks to professional pursuit of the art. Exercises are practiced in correct breathing, the production of tone, and in gesture; moreover, individual faults are pointed out and remedies suggested. The work in Oratory 1 aims at securing reading that shall be intelligent, natural, and forcible. In this subject the principles that underlie all successful public speaking are indicated, and, so far as possible, these principles are applied in practice. In the advanced subjects opportunity is offered for carrying farther the reading of literature, or of preparing and delivering original speeches. In connection with oratory as a means of persuasion it is urged that students take related subjects in English composition, as English 5.

1. Study of the Voice; Enunciation and Pronunciation; Attitude and Gesture. *Th., 2.00.* ASSISTANT PROFESSOR WHITTEMORE.

2. Reading of Standard Prose and Verse. *One hour a week.*
ASSISTANT PROFESSOR WHITTEMORE.

6. The Preparation and Delivery of Original Speeches. *One hour a week.* ASSISTANT PROFESSOR WHITTEMORE.

[7. The History of Oratory. Lectures, occasional papers, and prescribed reading. *Tu., Th., 2.00.* (2) PROFESSOR MAULSBY.]

The purpose of Oratory 7 is to furnish, by a review of the work of the great orators, both incentive and knowledge to those interested in public speaking.

8. Extemporaneous Speaking. *One hour a week.*
ASSISTANT PROFESSOR WHITTEMORE.

Oratory 8 is open to those who have taken Oratory 6.

GERMAN

PROFESSOR FAY

The aim of the department is twofold, according as the student has entered with the elementary or the advanced requirement. In the former case it is to lead him in the briefest possible time to such a mastery of the language as will enable him to use it as a source of information and medium of literary culture; where this preliminary work has already been done, to afford this literary culture itself, together with such historical and linguistic knowledge as may properly accompany advanced work in a literary department. Hence, in the elementary subjects, facility and accuracy of translation are sought by means of copious reading and careful grammatical drill; in the intermediate year the classic masterpieces are read for their own sake, together with such historical material as will throw light upon the epoch in which they were written or with which they deal; in the advanced work the systematic study of the history of the literature is undertaken, and opportunity is afforded for acquiring a knowledge of the earlier literary forms. Composition forms an important element in the instruction. Though no attempt is made to teach the student to speak the language, he is trained from the outset to hear it and to understand it when spoken, chiefly for the sake of the reflex influence of such practice upon pronunciation.

Six consecutive subjects are offered. While it is not impossible to take them all within the four college years, the scheme is based upon the supposition that the earlier subjects will have been taken in the preparatory school.

SUBJECTS

*1. Elementary German. Joynes-Meissner Grammar, with Lewis's Exercises; Hewitt's German Reader; Hatfield's Lyrics and Ballads. *Mon., Wed., Fri., 9.45.* MR. COLWELL.

German 1 is the equivalent of the entrance requirement in Elementary German, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Intermediate German. Review of grammatical principles, especially with reference to syntax. Reading of modern prose and poetry, such works as Baumbach, Der Schwiegersohn; Gerstäcker, Irrfahrten; Seume, Mein Leben; Ebner-Eschenbach, Die Freiherren von Gemperlein. *Mon., Wed., Fri., 8.45.* MR COLWELL.

German 2, when taken by entering students, presupposes two years' study of the language in the preparatory school. It is possible for a student who has done with distinction the work of German 1, and who shall do a prescribed amount of outside reading, to omit this subject and enter German 3.

**3. First half-year: the rapid reading of modern prose; contemporary authors. Second half-year: introduction to the classic authors: Lessing, Minna von Barnhelm; Schiller, Die Jungfrau von Orleans; Goethe, Hermann und Dorothea. *Tu., Th., Sat., 8.45.* PROFESSOR FAY.

For entering students German 3 presupposes three years of preparatory study. Either half-year may be counted as a half-subject.

**3B. German Composition. First half-year: Stein's Exercises, dictation, conversation. Second half-year: Buchheim's Exercises, oral and written translation into German, and conversation. *Tu., Th., 9.45.* MR. COLWELL.

German 3B is offered to students who have satisfactorily completed German 2, or its equivalent.

4. Schiller and Goethe. Maria Stuart; Wallenstein; Egmont; Robertson's Correspondence between Goethe and Schiller; lyrics; collateral reading in historical prose. *Tu., Th., Sat., 11.45.* MR. COLWELL.

German 4 is open to entering students who have had four years of preparatory study, or who, having passed with distinction the entrance examination in Advanced German, also pass with credit a special examination in

advanced grammar and sight translation. Juniors and Seniors whose major department is German may be permitted to take 4 and 5 in the same year.

5. Advanced reading in Lessing and Goethe. Nathan der Weise, Emilia Galotti, Laokoon; Tasso, Iphigenie, Faust, Parts I and II, with collateral reading. *Mon., Wed., Fri., 10.45.* PROFESSOR FAY.

6. History of German Literature, with illustrative works for leading epochs. Middle High German: Bachmann, Mittelhochdeutsches Lesebuch. *Mon., Wed., Fri., 8.45.* PROFESSOR FAY.

FRENCH

PROFESSOR FAY AND PROFESSOR LEWIS

The plan and scope of the department are, in general, the same as those of the Department of German, to the statement of which the student is referred. Six consecutive subjects are offered.

SUBJECTS

*1. Elementary French. The essentials of grammar, with composition; Grandgent's Grammar; a French reader; reading of short works of modern authors in prose and verse. *Mon., Wed., Fri., 9.45.* PROFESSOR LEWIS.

French 1 is the equivalent of the entrance requirement in Elementary French, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Intermediate French. Review of grammatical principles, especially with reference to syntax; exercise in composition; vocabulary practice; reading of modern fiction and drama, such as Merimée's Colomba and Sandeau's Mademoiselle de la Seiglière. *Mon., Wed., Fri., 8.45.*
PROFESSOR LEWIS.

French 2, when taken by entering students, presupposes two years' study of the language.

**3. Reading of modern authors (Thiers, Taine, de Vigny); introduction to seventeenth-century classics (Corneille, Racine, Molière). Review of grammatical principles, with advanced vocabulary practice. *Tu., Th., Sat., 8.45.* PROFESSOR LEWIS.

For entering students French 3 presupposes three years of preparatory study. Either half-year may count as a half-subject.

4. Literature and Manners of the Seventeenth Century. Crane's Société Française au XVIIe Siècle; Molière, Les Précieuses Ridicules, Les Femmes Savantes; Boileau, Les Héros de Roman; Madame de Sévigné;

Madame de la Fayette; Rostand, Cyrano de Bergerac; collateral reading from modern critics. *Mon., Wed., Fri.*, 2.00. PROFESSOR FAY.

French 4 is open to entering students who have had four years of preparatory study of the language, or who, having passed with distinction the entrance examination in Advanced French, also pass with credit a special examination in advanced grammar, composition, and sight translation. Juniors and Seniors whose major department is French may be permitted to take 4 and 5 in the same year.

5. Literature of the Eighteenth and Nineteenth Centuries. First half-year: the drama, poetry, the novel, the philosophical essay, and criticism. Second half-year: introduction to the history of French literature, presented by lectures and collateral reading. *Mon., Wed., Fri.*, 3.00.
PROFESSOR LEWIS.

Either half-year may count as a half-subject.

6. A systematic study of French literature from the earliest times to the middle of the nineteenth century. The manuals of Petit de Julleville and Brunetière will be read, together with illustrative texts for the several epochs, from which some period will be chosen for more detailed study. *Mon., Wed., Fri.*, 9.45. PROFESSOR FAY.

ITALIAN

PROFESSOR FAY

The work offered in Italian is open to those only who have had two years of college study in French, or its equivalent. With such previous training, the student is able to acquire with rapidity a reading knowledge of the language, and thus to become acquainted within the year with the characteristics of contemporary and classic literature. This subject is presented in alternate years.

SUBJECT

[1. Grandgent's Grammar and Composition; Bowen's Reader; Maffei, Merope; Dante, Divina Commedia (Scartazzini's edition). *Tu., Th., Sat.*, 10.45. PROFESSOR FAY.]

LATIN

PROFESSOR DENISON

The aim of the department of Latin is to lead students to a thorough appreciation of a language and people that have had profound influence on modern life and literature. The department offers a wide range of reading, which should impart to the

faithful student not merely a greater accuracy, a greater power to make fine distinctions and observe small details, but also a broader general culture. Considerable time is devoted to reading at sight. The attention of students is directed constantly to the history, archaeology, art, public and private life, and religion of the Roman people, as well as to the formation and structure of their language and its relation to other languages. Due emphasis is laid on the connection between ancient and modern life and thought. The various reading courses are supplemented with lectures on appropriate topics, and are illustrated from time to time with the stereopticon. Latin 1, 2, either 3 or 4, and three composition courses are offered every year, and a number of other subjects, such as Latin 8, 9, and 10, are given, with due announcement, at regular but longer intervals. Courses 3, 4, 7, and all designated by numbers above 7, as well as all subjects in Classical Archaeology, are suitable for graduate students.

SUBJECTS

*1. Cicero, De Senectute, or De Amicitia; Vergil, Eclogues; selections from Latin poets; Livy, Books I and II, or XXI and XXII; reading at sight; lectures on suitable topics. *Tu., Th., Sat.: Division (a), 8.45; Division (b), 9.45.* PROFESSOR DENISON.

Latin 1 is introductory to all later subjects. Latin 5 is designed primarily for students of Latin 1 who wish for work in composition.

2. Pliny, selected letters; Petronius, Cena Trimalchionis; Horace, Odes and Epodes; Tacitus, Germania or Agricola; reading at sight; lectures on suitable topics. *Mon., Wed., Fri., 3.00.* PROFESSOR DENISON.

Latin 2 is open to students who have completed Latin 1.

[3. Juvenal, principal Satires; Martial, selected Epigrams; Suetonius, selections; Tacitus, selections from the Annals; reading at sight. These authors will be studied with special reference to the information they afford concerning the history and life of the early empire. *Mon., Wed., Fri., 11.45.* PROFESSOR DENISON.]

4. Horace, Satires and Epistles; Plautus, two plays; Cicero, selected letters; reading at sight. *Mon., Wed., Fri., 11.45.* PROFESSOR DENISON.

Subjects 3 and 4 will be given in alternate years, and are designed for those who have completed Latin 2, or its equivalent. They may, by special arrangement with the instructor, be taken as half-subjects in either half-year.

*5. Latin Composition: translation of English narrative, based in part on the prose authors read in Latin 1, with which it may be taken most profitably. *Tu., 2.00.* PROFESSOR DENISON.

6. Latin Composition. Latin 6 is open only to students who have completed Latin 5. In it particular attention will be paid to idiom. By reason of the variation of the work from year to year, the course may be taken a second time with due credit. *Th., 2.00.* PROFESSOR DENISON.

7. Latin Composition. Original essays in Latin. Study of selections of prose as models. Reading at sight. *One hour a week.* PROFESSOR DENISON.

8. Catullus and the Elegiac Poets, Tibullus, Propertius, and Ovid. *Three hours a week.* (1) PROFESSOR DENISON.

[9. Reading course, to be announced later. *Three hours a week.* (2) PROFESSOR DENISON.]

[10. Lucretius, selections; Vergil, Georgics; Seneca, Medea. *Three hours a week.* (2) PROFESSOR DENISON.]

Latin 8, 9, and 10 are half subjects, and are given, one each year, in regular rotation. They are open to students who have completed Latin 1, but are intended to be a supplement, not a substitute, for 2, 3, and 4. Those who wish to widen the range of their Latin reading will find these subjects suited to that end. The authors selected will be studied mainly from a literary point of view.

NOTE:—The attention of Greek and Latin students is called to related subjects listed under Classical Archaeology, pages 70 and 71.

GREEK

PROFESSOR SCHNEIDER AND PROFESSOR WADE

The aim of the department is to treat the Greek language not merely as a disciplinary instrument, but as a factor in the broadest and most liberal culture. Throughout the course the practice of reading at sight is encouraged, and especial effort is made to develop such facility that the student may resort with pleasure to the masterpieces of the Greek language, and find in them the delights and inspirations of a noble literature.

To this end also considerable attention is paid to the style and literary characteristics of the authors read. The relations of Greek to the Latin, German, and English languages are discussed, and the course is shaped to develop, discipline, and enrich the linguistic resources of the student. Reading without

translation is encouraged from the beginning. Incidentally, studies are made of the customs and daily life of the people. Discussion relative to the laws, philosophy, and religion of the Greeks is introduced, and some attempt is made to exhibit the indebtedness of modern civilization to Hellenism.

SUBJECTS

*1. Elementary. Goodwin's Grammar; Xenophon, Anabasis; Homer. *Double subject. Daily, 9.45.* PROFESSOR WADE.

Greek 1 is intended for students entering without Greek and wishing to begin the study of that language. It is assumed that their previous training in linguistic studies will enable them to proceed rapidly and accomplish in one year all the work usually done in preparation for college. This subject may be taken (without credit) as a normal course by advanced students, on consultation with the instructor.

**2. Xenophon, Symposium; Plato, Euthyphron, and Apology; Homer; Euripides, one play. *Mon., Wed., Fri., 2.00.* PROFESSOR WADE.

Greek 2 is for students who have passed Greek 1, or the entrance requirements in Greek.

3. Herodotus, Book VIII; Plutarch, Life of Themistocles; Thucydides, portions of Book I; Aeschylus, the Persians; Sophocles, Antigone; Euripides, Alcestis. *Tu., Th., Sat., 11.45.* PROFESSOR WADE.

4. Theocritus, Idylls and Epigrams; Pindar, Olympian and Pythian Odes; Tyler's Selections from Greek Lyrics; reading at sight in the Odyssey. *Tu., Th., Sat., 8.45.* PROFESSOR SCHNEIDER.

Greek 4 is open to those who have completed Greek 3. Much attention is paid to the development of Greek lyric poetry, and the various theories of rhythm and metre are discussed. Lectures on appropriate topics are given in connection with the work.

5. Plato, Symposium; Aristotle, Ethics, Books I-IV, or Politics; reading at sight in Herodotus and Lucian. *Tu., Th., Sat., 9.45.*
PROFESSOR SCHNEIDER.

Greek 5 is open to those who have completed Greek 4. A critical study of the authors read is supplemented with a general survey of Greek philosophy.

**6. Greek Composition; practice in sight reading. *One hour a week.*
PROFESSOR WADE.

Greek 6 may be taken by anyone who has had the equivalent of Greek

1. It is especially recommended to Freshmen intending to pursue the study of Greek beyond the Freshman year.

7. Greek Composition; reading at sight. *One hour a week.* PROFESSOR WADE.

Greek 7 is open only to students who have completed Greek 6.

8. Elegiac and Lyric Poets. Lectures and reading. *Three hours a week.* (2) PROFESSOR WADE.

Greek 8 is open to students who have completed Greek 2.

[9. Orators: Jebb, Selections from the Attic Orators; Lysias; Demosthenes. Reading and lectures. *Three hours a week.* (2) PROFESSOR WADE.]

Greek 9 is open to students who have completed Greek 2.

[10. Advanced subject, for the degree of Master of Arts. Work will be arranged on consultation with the instructor, to suit the needs of the student. PROFESSOR WADE.]

CLASSICAL ARCHAEOLOGY

Under this title are grouped subjects of the Greek and Latin departments which deal, to a large measure in lecture form, with the art, life (both public and private), and religion of the ancient Greeks and Romans. The work will consist of lectures, collateral reading and investigation, and papers. There will be illustration, wherever possible, with photographs, stereopticon, and specimens. Completion of Greek 1, or Latin 1, or both, as the instructors may require, is, except for subjects 1 and 2, a pre-requisite for admission. The following subjects are intended to supplement the reading of classical authors, which naturally forms the basis of serious study in Classical Archaeology. It is intended to give two subjects each year, as follows:—

SUBJECTS

[1. Greek, Roman, and Etruscan Architecture. *Three hours a week.* (1) PROFESSOR DENISON.]

[2. Greek and Roman Sculpture. *Three hours a week.* (2) PROFESSOR WADE.]

Classical Archaeology 1 and 2 will be given in 1904-1905.

[3. Roman Private Life. *Three hours a week.* (1) PROFESSOR DENISON.]

Classical Archaeology 3 will be given in 1905-1906.

4. Greek Private Life. *Mon., Wed., Fri., 4.00.* (1) PROFESSOR WADE.

In subjects 3 and 4 there will be systematic treatment of such topics as the customs pertaining to birth, education, marriage, death, the house, furniture, dress, meals, amusements.

5. Roman Public Life. *Three hours a week.* (2) PROFESSOR DENISON.

[6. Greek Public Life. *Three hours a week.* (2) PROFESSOR WADE.]

* Classical Archaeology 6 will be given in 1905-1906.

In subjects 5 and 6 there will be systematic study of such topics as the geography and topography of the ancient world, commerce and navigation, political, legal, and military institutions, measures and money, books, inscriptions, religion and festivals, chronology and calendar.

HEBREW

PROFESSOR WOODBRIDGE

Hebrew is offered as a foundation for the critical study of Old Testament literature, and of a more intimate understanding of Hebrew thought and life.

SUBJECTS

1. The Elements of Grammar; translation of portions of Genesis, of the Book of Ruth, and of other selections. *Tu., Th., Sat., 11.45.*

PROFESSOR WOODBRIDGE.

2. Syntax; critical reading from the Historical Books, from the Prophets, and from the Psalms. *Three hours a week.*

PROFESSOR WOODBRIDGE.

PHILOSOPHY*

PROFESSOR CUSHMAN, PROFESSOR SHIPMAN, PROFESSOR TOUSEY, AND PROFESSOR KNIGHT

The department offers work in all the traditional branches of philosophy, adapted to the needs of many kinds of students. To the specialist in science it affords a comprehensive view of the sciences from the point of view of metaphysics. To the student seeking general culture it affords the liberalizing study of the history of philosophy. To the student of mathematics it commends logic as a necessary supplement to his work. To the specialist in philosophy it will give work as far as an undergraduate should go. The beginner has open to him the choice of

* The departments of Philosophy, History and Public Law, and Political Science constitute the group of Mental and Moral Science, in which twelve term hours of work are required for A.B. See page 57.

two subjects: logic, and the history of philosophy. If he chooses to begin with logic, the work in advanced logic is open to him. In all cases where there is opportunity it is advised that the student begin with the history of philosophy, which is its primer. To follow this natural course makes of philosophy an inductive science. The other subjects may then follow at the student's option, or as his specific needs seem to demand. Students choosing philosophy as their major department will be expected to take at least three term hours each in the history of philosophy, logic, and psychology, and to make up three years of continuous work. The department is open to all except Freshmen and first-year Special students. The Philosophical Conference holds public meetings during the year. It gives the opportunity to the students of discussing philosophical subjects collateral with the regular work, and often invites eminent persons to address it on special topics.

INTRODUCTORY SUBJECTS

1. History of Ancient Philosophy: the religious period of ancient thought, the pre-Socratic Greeks, the Greek Enlightenment, Plato and Aristotle; the Hellenic-Roman thought, including Stoicism, Epicureanism, neo-Platonism, and early Christianity. Lectures, and text-book: Windelband's History of Ancient Philosophy. *Tu., Th., Sat., 9.45.* (1)
PROFESSOR CUSHMAN.

[2. History of Modern Philosophy: the beginnings of modern thought in the middle ages, the Renaissance (1500-1688), the modern Enlightenment (1689-1781), German philosophy from Kant to Hegel (1781-1820), modern Evolution theories. Lectures and text-book. *Tu., Th., Sat., 9.45.* (1) PROFESSOR CUSHMAN.]

Philosophy 1 and Philosophy 2 are given at the same hour on alternate years.

3. Logic, especially Deductive, with an elementary consideration of fallacies. *Tu., Th., Sat., 10.45.* (1) PROFESSOR SHIPMAN.

ADVANCED SUBJECTS

4. Logic (advanced), especially Inductive. *Tu., Th., Sat., 10.45.* (2)
PROFESSOR SHIPMAN.

Much attention is paid to practical exercises. Philosophy 4 is open to those students who have completed Philosophy 3 with distinction. In it fallacies are discussed at much greater length, and recent modifications of logical doctrine are examined.

**5. Psychology. Lectures and illustrative experiments. The phenomena of consciousness are studied with reference to the physiology of the nervous system, including the brain, eye, ear, skin, nose, and mouth. The elements of consciousness, social psychology. *Tu., Th., Sat., 9.45.* (2)
PROFESSOR CUSHMAN.

Philosophy 5 must be preceded by Philosophy 1, 2, or 3.

6. Ethics, Theory of. The moral nature; springs of conduct; moral judgments; theories of the moral standard, particularly sentimentalism, hedonism, rigorism, eudæmonism; moral volition, with critical examination of determinism; the moral ideal. Text-books, lectures, assigned reading, themes. *Mon., Wed., Fri., 10.45.* (1) PROFESSOR TOUSEY.

Philosophy 6 must be preceded by Philosophy 1, 2, or 3.

7. Ethics, Historical and Critical. History of ethical speculation; development of moral customs and ideals. Text-books, lectures, prescribed studies in the classics of ethical literature, and theses. *Mon., Wed., Fri., 10.45.* (2) PROFESSOR TOUSEY.

Philosophy 7 must be preceded by Philosophy 6.

8. Ethics, Applied. Bearing of moral theory on the problems of (a) the individual life, (b) the social life. Special consideration of duties, rights, temperance, charities, moral pathology, penology. Text-books, lectures, prescribed reading, and theses. *Tu., Th., Sat., 10.45.* (2)
PROFESSOR TOUSEY.

Philosophy 8 must be preceded by Philosophy 6.

9. Metaphysics: the Theory of Reality, including a review and criticism of the common theories of life, such as materialism, realism, theism, mysticism, idealism, and the fundamental problems involved. Lectures, theses, text-book. *Mon., Wed., Fri., 10.45.* PROFESSOR CUSHMAN.

The problems discussed are those fundamental to science, ethics, aesthetics, and logic, considered from the point of view of metaphysics. Among these are the questions of teleology, consciousness and self-consciousness, personality, immortality, freedom and necessity, causation, nature, evil, beauty.

10. Aesthetics: the theory of beauty, and the philosophy of art; historical review of aesthetic theories. Lectures and theses, collateral reading. *Mon., Wed., Fri., 9.45.* (1) PROFESSOR CUSHMAN.

[11. English Philosophy from Hobbes to Hume. The historical development of the English school of thought until Hume, with a critical and expository reading of the works of Hobbes, Locke, Berkeley, and Hume, together with a survey of contemporaneous and other political theories, such as those of Spinoza, Hooker, Rousseau, and Grotius. *Mon., Wed., Fri., 9.45.* (2) PROFESSOR CUSHMAN.]

Philosophy 11 will be given in 1904-1905.

[12. The Philosophy of Kant. A careful critical and expository reading of the Critiques of the Pure Reason, the Practical Reason, and the Judgment, in Watson's translation. The historical position of Kant with reference to his predecessors and to his influence upon modern thought. Lectures, prescribed reading. *Mon., Wed., Fri., 9.45.* (2)

PROFESSOR CUSHMAN.]

13. Descartes, Spinoza, and Leibnitz, their historical development and doctrines, with a critical and expository reading of their works. Lectures and prescribed reading. *Mon., Wed., Fri., 9.45* (2)

PROFESSOR CUSHMAN.

14. The Philosophy of Theism. The Final Problem; Limits of the Intelligence; Theistic Arguments; Final Cause in Nature; Anti-Theistic Theories. *Mon., Wed., Fri., 11.45.* PROFESSOR TOUSEY.

15. The Philosophy of Religion, historical, critical, and constructive. topical reports by the class, and lectures. *Tu., Th., Sat., 11. 45.*

PROFESSOR KNIGHT.

PEDAGOGICS

SUBJECT

1. The Theory and Practice of Teaching. The ethical and psychological principles involved in teaching, important modern theories, supplementary lectures on practical methods. *Tu., Th., Sat., 11.45.* (2)

PROFESSOR CUSHMAN, ASSISTED BY TEACHERS FROM LEADING SECONDARY SCHOOLS.

HISTORY AND PUBLIC LAW*

PROFESSOR EVANS AND PROFESSOR BOLLES

The department aims to develop the idea of unity in the history of mankind, and to make the study of all history of practical value through its relation to present-day problems and conditions. To this end the approach is made through subjects intended to give a thorough scientific knowledge of essential facts, and so arranged as to show these facts in their proper relations. History 1 and 2 are the introductory subjects by which the student is prepared for more detailed work. History 3 is devoted to the history of the United States. The subjects numbered from 4 to 9 offer to properly qualified students opportunity to make a more detailed study of limited periods in

* See note, page 57.

the history of Europe and America. These subjects are arranged in two series, which alternate with each other from year to year, and thus cover a considerable range. Subjects 11 to 14 relate to church history and the comparative history of religions. History 15 is devoted to research.

Students expecting to make History their principal study are urged to devote considerable time in their first and second years to the study of modern languages. In History 5, 6, and 7 a reading knowledge of French will be assumed.

In the division of Public Law and Administration the object is to furnish such general knowledge of political institutions and their working as is needed by every intelligent citizen, and also to assist those who expect to enter the legal profession. The study of law and government is closely related to the study of history, and hence one year of history is required for admission to the work in Public Law. The work in this group begins with a study of the political institutions of the United States, which is followed by more advanced subjects dealing with the institutions of our own and other countries, as well as by subjects treating international relations, the history and principles of jurisprudence, and public administration. A knowledge of French is desirable, and in some cases indispensable. As far as possible the subjects should be taken in the order of their numbers.

History

SUBJECTS

1. The General History of Europe since the Fall of Rome. History 1 is an outline course, designed to give a comprehensive view of the various political, religious, industrial, and social factors of the history of Europe, and thus to pave the way for a more detailed study of limited periods. Text-books, lectures, assigned readings, and the preparation of themes.
Mon., Wed., Fri., 10.45. PROFESSOR EVANS AND MR. WOOD.

History 1 must precede all other subjects in History, excepting History 11 ,which may precede it, History 12, which may accompany it, and History 2, which it may either precede or accompany. History 1 and 2 are not open to Freshmen, and will not be accepted for an advanced degree. Students desiring to take all the subjects in the department should elect History 1 and 2 in their second year.

2. The General History of England. Text-book, lectures, and themes. *Mon., Wed., Fri., 8.45.* PROFESSOR BOLLES.

3. American History from 1750 to the Civil War. Text-book, lectures, and themes. *Mon., Wed., Fri., 10.45.* PROFESSOR BOLLES.

4. Constitutional History of England. A study of the growth of the Constitution of England, with particular reference to the Stuart period. *Mon., Wed., Fri., 3.00.* (1) PROFESSOR EVANS.

5. The History of the Continent during the Seventeenth and Eighteenth Centuries. A detailed study of the rise of Russia, the creation of Prussia, the rule of Richelieu and Mazarin, the age of Louis XIV, and the Ancient Régime. *Mon., Wed., Fri., 3.00.* (2) PROFESSOR EVANS.

History 4 and 5 will not be given in 1904–1905, but may be expected in 1905–1906.

[6. The French Revolution and the Napoleonic Period. The history of Europe from 1789 to 1815. *Mon., Wed., Fri., 3.00.* (1) PROFESSOR EVANS.]

[7. The Nineteenth Century. One of the chief purposes of History 7 is to furnish some explanation of present-day questions in European politics. *Mon., Wed., Fri., 3.00.* (2) PROFESSOR EVANS.]

History 6 and 7 will not be given in 1903–1904, but may be expected in 1904–1905.

[8. History of English Cities and Towns. A study of the chief municipalities of Great Britain, with particular reference to their connection with the history of the country. Lectures and illustrations. *Tu., Th., 3.00.* (1)

History 8 will be given in 1904-1905. PROFESSOR BOLLES.]

[9. English Social Life. Lectures and illustrations. *Tu., Th., 3.00.* (2) PROFESSOR BOLLES.]

History 9 will be given in 1904-1905.

11. History of the Jews before Christ. A study of the political relations, institutions, and literature of the Jewish people. *Mon., Wed., Fri., 4.00.* PROFESSOR HARMON.

12. History of the Beginnings of Christianity. A study of the relations of the apostolic church in its extension, and the rise of its literature. *Mon., Wed., Fri., 3.00.* (1) PROFESSOR HARMON.

13. The Non-Christian Religions. Comparative studies of religion and civilization in ancient Egypt, Chaldea, Greece, Rome, and Germany, and in ancient and modern India, China, Japan, and Turkey. *Tu., Th., Sat., 8.45.* (1) PROFESSOR KNIGHT.

14. History of the Church, including the Sects, from the Apostles to the present time. History of Doubt. *Tu., Th., Sat., 9.45.*
PROFESSOR WOODBRIDGE AND PROFESSOR KNIGHT.

15. Seminary in History and Public Law. Investigation of selected topics from the sources. During the year 1903-1904 the subject of study will be the constitutional history of the Civil War. History 15 is open only to such students, making History their major subject, as receive the special permission of the instructor. Full subject, counting as six term hours; weekly meetings of two hours each. PROFESSOR EVANS.

Public Law and Administration

SUBJECTS

1. Political Institutions of the United States—Federal, State, and Municipal. A study is made of government from the standpoint both of constitutional arrangements and of its actual working as modified by usage and existing conditions. Text-book: Bryce, The American Commonwealth, accompanied by lectures, assigned readings, and the preparation of a thesis. *Mon., Wed., Fri., 11.45.* (1) PROFESSOR EVANS.

Public Law 1 must be preceded by History 1, and must precede all other courses in this group, except Public Law 3. Students desiring to take all the subjects in Public Law should elect History 1 (also History 2 if possible) in their second year, and Public Law 1, 2 or its alternate, and 3 in their third year.

[2. Constitutional Law. A study of the Constitution of the United States, as interpreted in the chief decisions of the Supreme Court. *Mon., Wed., Fri., 11.45.* (2) PROFESSOR EVANS.]

Public Law 2 will not be given in 1903-1904, but may be expected in 1904-1905.

3. Ancient Law. Roman Law. Lectures, text-book, and discussions. *Tu., Th., Sat., 9.45.* (1) PRESIDENT CAPEN.

Public Law 3 must be preceded by History 1.

[4. European Government and Politics. A study of the constitutions of the chief European states, together with a consideration of some of the most important questions of European politics. A reading knowledge of French is desirable. Text-book, lectures, assigned reading, and the preparation of a thesis. *Mon., Wed., Fri., 8.45.* (1) PROFESSOR EVANS.]

[5. International Law and the History of Diplomacy: the history of international law, a consideration of its leading principles, and some account of the most important treaties and diplomatic controversies. Text-book, lectures, assigned readings, and the preparation of a thesis. *Mon. Wed., Fri., 8.45.* (2) PROFESSOR EVANS.]

[6. Principles of Public Administration, with particular reference to municipal corporations. *Mon., Wed., Fri., 8.45.* (1) PROFESSOR EVANS.]

7. Elements of Jurisprudence. A study of the leading juristic principles, based on the Institutes of Justinian and Blackstone's Commentaries, designed to fit students for a more intelligent study of the law from a professional standpoint. *Mon., Wed., Fri., 11.45.* (2) PROFESSOR EVANS.

Public Law 7 will not be given in 1904–1905.

POLITICAL SCIENCE*

PRESIDENT CAPEN, PROFESSOR METCALF, AND MR. PRICE

In its course of instruction, the chief aim of the department of Political Science is to give a general view of the most important branches of political economy, beginning with the elements of the science and passing by degrees to work of the investigative order. The topics and the methods of investigation are also designed with reference to the constantly increasing needs of those who are fitting themselves for various practical careers, such as banking, transportation, or commerce; and to those who look forward to the legal profession, to the public service, to journalism, or to work in connection with social problems.

To these ends instruction is offered at present in eight different subjects. Economics 1 is designed to lay the foundation for the advanced work, but endeavors at the same time to satisfy the wants of those who seek simply a general knowledge of economics. Economics 1, or its equivalent, must precede all other study in the department. Students who desire to specialize in economics, if qualified to do so, may enter upon the work in the first year of their college course. For the advanced subjects a knowledge of general, constitutional, and political history is useful. The character of the work in the advanced classes is briefly outlined in connection with the following statement of subjects.

SUBJECTS

1. Elements of Economics. Exposition of the fundamental principles of the production, exchange, and consumption of wealth. Lectures on

* See note, page 57.

trade unions, co-operation, socialism, banking, and finance. Bullock's Introduction to the Study of Economics is used as a guide. *Tu., Th., Sat., 10.45.* PROFESSOR METCALF.

2. Modern Economic History, with special reference to the economic history of the United States. Leading topics are the transition from regulated to competitive system of industry; the industrial revolution; the financial, commercial, and industrial history of the British-American colonies and the Confederation. In the study of the United States during the nineteenth century the problems of free and slave labor, transportation, industrial organization, tariff, and finance will receive special attention. *Mon., Wed., Fri., 9.45.* MR. PRICE.

3. Practical Sociology. The nature and methods of social science. This subject is conducted with special reference to American conditions, and comprises a study of the laws of population, the institution of the family, the development of great cities, immigration, pauperism, charities, labor organizations, and the liquor question. Lectures, reports, book reviews, and visits to charitable and correctional institutions in Boston and vicinity. *Three hours, to be arranged.* (2) PROFESSOR METCALF.

4. Principles of Public Finance. Public Expenditures; classification of public revenues; recent reforms in taxation; the development and significance of public debts; financial administration; recent European and American works on finance. Adams's Public Finance is used as a guide. Lectures and discussions. *Tu., Th., Sat., 8.45.* (1) PROFESSOR METCALF.

5. Money, Credit, and Banking: an historical course, with special reference to the financial experience of the United States. Leading topics are Hamilton's financial system; protection and revenue tariffs; the bank question; the fiscal policy of the Civil War; resumption of specie payments; the national banking system; State and local taxation; silver legislation and the panic of 1893; government loans; present currency problems. Lectures, discussions, assigned reading, and theses. Dewey's Financial History of the United States is used as a guide. *Tu., Th., Sat., 8.45.* (2) PROFESSOR METCALF.

6. Selected topics in Economics. Topics for 1903–1904 are: *First half-year*: (*a*) Modern Industrial Combinations, being a study of the causes producing trusts, the function of the industrial promoter, capitalization of trusts, influence of industrial monopoly upon prices, profits and wages, the practical results of regulation through publicity, taxation, and state ownership. *Second half-year*: (*b*) The Modern Organization of Labor,—an account of the growth, methods, and aims of modern associations of wage earners, a study of their relations to the factory system, labor disputes, labor legislation, workingmen's insurance, and state socialism.

(*c*) The Theory and History of Commercial Crises in England, France, Germany, and the United States during the nineteenth century.

The Report of the United States Industrial Commission will form the basis for topics (*a*) and (*b*). Each member of the class will be required to trace the history and workings of some prominent combination of capital or labor. Either half-year may count as a half-subject. *Tu., Th., Sat., 9.45.*

PROFESSOR METCALF.

7. The History of Economics: an account of the beginnings, the progress, and the various schools of economic science; study of the writings of Adam Smith, Ricardo, Mill, and others. Economics 6 is open to advanced students who are specializing in Economics. A reading knowledge of French and German is desirable. *Mon., Wed., Fri., 4.00.* (2)

PROFESSOR METCALF.

8. Seminary in Economics and Sociology, designed for advanced students who are specializing in the department. Questions in economics, statistics, or sociology may be selected. *Hours and credit to be arranged with the instructors.* PRESIDENT CAPEN AND PROFESSOR METCALF.

MATHEMATICS

PROFESSOR BROWN, PROFESSOR WREN, AND MR. RANSOM

The aim of the instruction in mathematics is to cultivate power of exact thinking, as well as skill in symbolic methods of drawing necessary conclusions. The class-room work is a combination of lectures with questioning of the students to ascertain that the points presented have been duly comprehended.

Mathematics 1, with 2 or 3, constitutes the required work in Mathematics. The two required subjects should be taken in the Freshman year. Students who intend to pursue further work in the department should take 3 in preference to 2, and should take 4, 5, and 6 in the Sophomore and Junior years. Other subjects may be taken when the student is prepared for each. Subjects 9, 10, 11, 13, and 14 require a knowledge of the Calculus. Juniors and Seniors who have mastered the Calculus may elect any of the remaining subjects.

Certain other subjects are of great value in supplementing and illustrating mathematical studies. Attention is called especially to Drawing 1, and to Civil Engineering 1 and 6.

SUBJECTS

1. College Algebra. *Tu., Th., Sat.: Division* (*a*), *8.45; Division* (*b*), *9.45.* (1) MR. RANSOM.

2. Solid Geometry. *Tu., Th., Sat., 9.45.* (2) MR. RANSOM.

3. Trigonometry. *Tu., Th., Sat., 8.45.* (2) MR. RANSOM.

4. Analytical Geometry. *Mon., Wed., Fri., 11.45.* (1) PROFESSOR WREN.

5. Elements of the Calculus. *Mon., Wed., Fri., 11.45.* (2) MR. RANSOM.

6. Differential and Integral Calculus. *Mon., Wed., Fri., 9.45.* (1) MR. RANSOM.

7. Differential and Integral Calculus (advanced). *Mon., Wed., Fri., 9.45.* (2) PROFESSOR WREN.

9. Theory of Equations and Determinants. *Three hours for the first half year.* MR. RANSOM.

10. Differential Equations. *Three hours for the second half-year.* MR. RANSOM.

11. Method of Least Squares. *Two hours for the second half-year.* PROFESSOR WREN.

12. Quaternions. *Three hours for the first half-year.* PROFESSOR WREN.

Mathematics 12 is open to students who have completed Mathematics 1, 2, 3, and 4.

[13. The Theory of the Potential Function. *Three hours for the second half-year.* PROFESSOR WREN.]

14. Theoretical Mechanics. *Mon., Wed., Fri., 10.45.* MR. RANSOM.

PHYSICS

PROFESSOR DOLBEAR AND ASSISTANT PROFESSOR CHASE

The work in Physics begins with a consideration of General Physics, this being the subject to be taken by those electing Physics for their prescribed work in science, and the introductory subject for major students in Physics. A text-book in used, critical comments and much additional material are supplied, and frequent lectures are given, with experiments. The aim is to present the science of physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible. Hence in each branch there are frequent returns to these first principles.

An elective course is offered of about twenty-five lectures upon the relations of physics to other branches of natural science,

introducing the doctrine of the conservation of energy as applicable to all. After this follows a more extended consideration of the fundamental questions in physics. Spencer's First Principles is read, and its subject-matter thoroughly discussed.

In the Physical Laboratory students are given Ames and Bliss's Laboratory Manual, and a syllabus of the course, for guides. These are supplemented by Glazebrook's Physical Optics, Pickering's Manipulations, Kaulrausch's Measurements, Stewart and Gee's Practical Physics, vol. 1, Glazebrook and Shaw's Practical Physics, Nichols's Laboratory Manual, vols. 1 and 2. In addition to the experimental and note-book work, many problems are solved. For the recitation and lecture work Ames's Theory of Physics is used.

Physics 2 and Physics 4 comprise elementary work in Electricity and Magnetism, Physics 4 being a mathematical treatment based upon Nichols and Franklin's Theory of Physics, vol. 2.

In the laboratory subject in Electricity much attention is given to Wheatstone's bridge and the measurement of resistance. Careful study is made of the condenser and the magnetic properties of iron. The candle-power of incandescent lamps, the determination of the constants of recording wattmeters, and the calibration of ammeters and voltmeters receive due attention. Students who are preparing themselves to become teachers of physics have an opportunity to perform most of the experiments needed for illustrating elementary work.

SUBJECTS

1. General Physics. Lectures and experiments. Physics 1 is to be taken by students choosing Physics for their prescribed science subject, and is introductory to other subjects in Physics. *Mon., Wed., Fri., 10.45.*
PROFESSOR DOLBEAR.

[2. Electricity. Thompson's Elementary Lessons in Electricity and Magnetism. Lectures and recitations. *Mon., Wed., Fri., 11.45.* (2)
ASSISTANT PROFESSOR H. G. CHASE.]

3. Physical Laboratory. Mechanics, Sound, Heat, and Light. *Lecture, Wed., 8.45. Laboratory, Tu., Th., 2.00 to 5.00.* (2) *Counting as three term hours.* ASSISTANT PROFESSOR H. G. CHASE AND MR. ROLLINS.

4. Electricity: Elementary Mathematical Treatment. *Mon., Wed., Fri., 11.45.* (1) ASSISTANT PROFESSOR H. G. CHASE.

5. Electrical Laboratory: Measurements and Tests. *Counting as four term hours. Mon., or Fri., 2.00 to 6.00.*
ASSISTANT PROFESSOR H. G. CHASE AND MR. ROLLINS.

Physics 5 must be preceded by Physics 4.

6. Relation of Physics to Sociology. Lectures. *Tu., Th., 4.00.* (1)
PROFESSOR DOLBEAR.

7. Spencer's First Principles. *Tu., Th., 4.00.* (2)
PROFESSOR DOLBEAR.

[8. Telephone and Telegraph. *Tu., Th., 9.45.* (2)
PROFESSOR DOLBEAR.]

ASTRONOMY

SUBJECT

1. Recitations and lectures, chiefly on Physical and Descriptive Astronomy, with special attention to the later discoveries, and their interpretation as bearing upon the history of the earth. *Tu., Th., 3.00.* (1)
PROFESSOR DOLBEAR.

CHEMISTRY

PROFESSOR MICHAEL AND PROFESSOR DURKEE

The work in the department begins with Chemistry 1, which is open for election by the students of the courses in Liberal Arts, and is required of engineering students in their second year. The instruction is by means of lectures, recitations, and laboratory work. The lectures, illustrated with numerous experiments, are intended to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including a brief account of the chemistry of the carbon compounds and the principal technical processes. One-half of the time devoted to this subject is given to practical work in the laboratory, and the student has an opportunity to verify some of the chemical theories, and to become familiar with substances and their chemical behavior. The lectures are supplemented with recitations and written examinations. An opportunity to continue the study of theoretical and inorganic chemistry is afforded by subjects 11 and 12. Those who wish may supplement the above course of lectures with laboratory practice by taking sub-

ject 14, in which some of the more difficult inorganic experiments are performed and less common preparations made.

The instruction in qualitative analysis extends through a year, and consists of two subjects (2 and 3), taught in part by lectures and recitations, but mainly by work in the laboratory. During the advanced course the student is required to analyze correctly a large number of mixtures and minerals. Quantitative Analysis is mainly taught by laboratory practice, in order that the student may attain that skill in manipulation which is necessary for this kind of work. In subject 4 the student is required to analyze the simpler salts, alloys, and minerals, and in the advanced subject 5 the more complicated minerals, ores, and commercial and food products. The analysis of organic substances is included in subject 5. Technical gas analysis (subject 9) is taught by lectures and laboratory work. Assaying (subject 7) is adapted to familiarizing the student with the practical methods of sampling and assaying gold, silver, and lead ores. The above subjects cover a comprehensive study of analytic chemistry, and are intended to give the student such thorough theoretical and practical knowledge as to prepare him for analytical work of any description. The course of lectures on metallurgy (subject 8), with recitations, is intended to give the student a general idea of fuels, ore dressing, refractory building materials, and the more important technical methods of extracting iron, copper, and silver.

The study of organic chemistry begins with a course of experimental lectures, together with recitations, which are designed to cover the general principles and methods, and include description of the most important organic compounds. For those who wish to continue the study of this science an opportunity is given by subject 13, in which by lectures the underlying theories of organic chemistry are more fully discussed, and the relations between them and organic reactions are explained. The laboratory practice in organic chemistry (subject 15) may be begun at the same time as subject 10, and continued with 13. It includes the methods for determining

the physical properties and molecular weights of organic substances, and the preparation of compounds. When taken in connection with subject 13, one or more researches of special importance will be repeated by the student. The subjects 12, 13, 14, 15, and 16 may be taken as graduate work.

Subjects 12, 13, 14, and 15, are especially designed to lead up to research work in chemistry, and students who have taken them, with subject 5, are prepared to enter on this line of advanced work. Ample facilities are offered for the successful prosecution of investigations in inorganic and organic chemistry.

Two laboratory hours are equivalent to one term hour, except in the special Course in Chemistry for the degree of Bachelor of Science, in which three hours of work in the laboratory count as one term hour. The quantitative and organic laboratories are open from nine to five o'clock daily, Saturday afternoons excepted. In Chemistry 2, 3, 4, and 5, the laboratory hours on Saturday are for students in the Course in Chemistry.

SUBJECTS

1. General Chemistry. Lectures, recitations, and laboratory work. *Lecture, Wed., Fri., 2.00; three hours of laboratory work, as assigned by the instructor. Counting as six term hours.*

PROFESSOR DURKEE AND DR. TURNER.

2. Qualitative Analysis. Basic Analysis. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00; Sat., 8.45 to 11.45.* (1) *Counting as three term hours.* PROFESSOR DURKEE.

3. Qualitative Analysis. Acids, Analysis of Salts, Commercial and Natural Products. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00. Sat., 8.45 to 11.45.* (2) *Counting as three term hours.*

PROFESSOR DURKEE.

4. Qualitative Analysis. Gravimetric and Volumetric Analysis; Analysis of Minerals. Lectures and laboratory work. *Mon., Fri., 2.00 to 5.00; Sat., 8.45 to 11.45. Counting as six term hours.* PROFESSOR DURKEE.

5. Qualitative Analysis (advanced course). Analysis of Minerals, Ores, Water, Food Products, Organic Analysis. Laboratory work. *Mon., Fri., 2.00 to 5.00; Sat., 8.45 to 11.45. Counting as six term hours.*

PROFESSOR DURKEE.

[6. Mineralogy 1 is equivalent to Chemisty 6.]

7. Fire Assay. Open to students who have taken 1, 2, 3, and 4. *Tu., Th., 2.00 to 5.00.* (2) *Counting as two term hours.*

PROFESSOR DURKEE.

8. Metallurgy. Lectures and recitations. Chemistry 8 is open to students who have taken Chemistry 1. *Wed., Fri., 10.45.* (2)

PROFESSOR DURKEE

9. Gas Analysis. Lectures and laboratory work. Chemistry 9 is open to students who have taken Chemistry 1, 2, 3, and 4. *Mon., 2.00 to 5.00. Counting as one term hour.* (1) PROFESSOR DURKEE.

10. Organic Chemistry. Lectures and recitations. Chemistry 10 is open to students who have taken Chemistry 1. *Mon., Wed., Fri., 9.45.* (1) *Counting as three term hours.* DR. ECKSTEIN.

11. Theoretical Chemistry. Lectures and recitations. Chemistry 11 is open to students who have taken Chemistry 1. *Mon., Wed., 11.45.* (2) *Counting as two term hours.* DR. ECKSTEIN.

12. Theoretical and Inorganic Chemistry (advanced course). Lectures and recitations. Chemistry 12 is open to students who have taken Chemistry 1 and 11. *Hours to be arranged.* (1) *Counting as three term hours.* PROFESSOR MICHAEL.

13. Organic Chemistry (advanced course). Lectures and recitations. Chemistry 13 is open to students who have taken Chemistry 1 and 10. (2) *and* (1) *Counting as six term hours.* PROFESSOR MICHAEL.

14. Laboratory work in Inorganic Preparations. *Hours to be arranged by the instructors. Counting as two term hours.*

PROFESSOR MICHAEL AND DR. ECKSTEIN.

15. Laboratory work in Organic Analysis: determination of physical constants and molecular weights; preparation of organic compounds. *Hours to be arranged by the instructors. Counting as three term hours.*

PROFESSOR MICHAEL AND DR. ECKSTEIN.

16. Original Investigations in Chemistry. *Hours to be arranged by the instructor.* PROFESSOR MICHAEL.

17. Discussion of Chemical Subjects and Recent Investigations. *One hour a week.* PROFESSOR MICHAEL.

BIOLOGY

PROFESSOR KINGSLEY AND DR. LAMBERT

Instruction in Biology is given both by lectures and by laboratory work, the object being to impart the scientific method of work and thought rather than to cram the student with a large number of unimportant facts. In the laboratory work four

hours a week is the minimum, but mere time service is not sufficient.

There are three well-lighted laboratories, furnished with every requisite for good work, including microscopes, microtomes, reagents, as well as abundant material for illustration and dissection. There is also a department library containing about 1,700 volumes and over 4,800 pamphlets and parts of volumes, while the college library contains the proceedings of many learned societies, both American and foreign. Besides these, proximity to Boston and Cambridge gives easy access to library facilities unequalled in any other part of America. There is required from all students taking laboratory courses a laboratory fee of two dollars a term for each course, payable in advance.

SUBJECTS

1. General Biology. Lectures and laboratory work. *Tu., Th.: lecture, 11.45; laboratory, 2.00 to 4.00. Counting as six term hours.*

PROFESSOR KINGSLEY AND DR. LAMBERT.

Biology 1 is required of all who elect work in this department, and is a pre-requisite for the other biological subjects.

2. Morphology of Invertebrates. Lectures and laboratory work. *Mon., Fri.: lecture, 4.00; laboratory, 2.00 to 4.00. Counting as six term hours.* PROFESSOR KINGSLEY.

[3. Morphology of Vertebrates. Continuation of Biology 2. *Mon., Fri.: lecture, 4.00; laboratory, 2.00 to 4.00. Counting as six term hours.*

PROFESSOR KINGSLEY.]

Biology 2 and Biology 3 are given in alternate years.

4. Elementary Physiology. Lectures, laboratory work, and recitations. *Lecture, Tu., Th., Sat., 11.45; laboratory, Tu., Th., 2.00 to 4.00.* (2) *Counting as three term hours.* PROFESSOR KINGSLEY.

Biology 4 must be preceded by or accompany Chemistry 1. Students in the Medical Preparatory course take this subject at the Medical School.

5. Normal Histology: a study of the tissues of vertebrates, including microscopical technique. *Lecture, Mon., 11.45; laboratory, Mon., Fri., 2.00 to 4.00.* (1) *Counting as three term hours.* PROFESSOR KINGSLEY.

6. Systematic Zoology. Laboratory work in the identification and classification of specimens. *Counting as three term hours.*

PROFESSOR KINGSLEY.

Biology 6 requires ability to read French and German.

7. Botany. Lectures and laboratory work. *Wed., Fri.: lecture, 11.45; laboratory, 9.45 to 11.45, or 2.00 to 4.00. Counting as six term hours.*
DR. LAMBERT.

8. Special Work. At least six hours weekly of laboratory work in the investigation of some problem. PROFESSOR KINGSLEY.

Subjects 5 to 8 are intended for both graduates and undergraduates.

GEOLOGY

MR. RICHARDS AND PROFESSOR KINGSLEY

The subjects offered in the department of Geology have a twofold object: to give an outline of the structure and history of the earth; and to give a training in the methods of observational science. The first subject (Geology 1) is introductory, open to all, and intended primarily for those who have had no previous work in science. The other subjects are such that certain preliminary studies, stated in connection with each, must be taken before entering upon them.

The illustrative collections in these lines are ample. Besides the exhibition specimens in the Barnum Museum, there is a large working collection illustrating mineralogy, lithology, and dynamical and historical geology. These are supplemented with maps, diagrams, photographs, and lantern slides. The work in each subject consists of lectures and recitations, together with work in the laboratory and in the field. Excursions are taken to neighboring points that illustrate certain phenomena. A laboratory fee of two dollars is required of all students taking laboratory courses.

SUBJECTS

1. Physiography. Lectures and recitations, laboratory and field work. *Hours to be arranged.* (2) *Counting as three term hours.*
MR. RICHARDS AND MR. THYNG.

2. General Geology. Lectures, two hours a week; laboratory or field work, four hours a week; open to students who have taken Physics 1 and Chemistry 1. *Mon., Wed., Fri., 10.45 to 12.45. Counting as six term hours.* MR. RICHARDS.

3. Paleontology. Recitations and laboratory work, six hours a week; open to students who have taken Geology 2 and Biology 1. *Counting as three term hours.* (1) or (2) PROFESSOR KINGSLEY AND MR. RICHARDS.

4. Field Geology. Conference, one hour; field work, six hours a week; open to students who have taken Geology 2. *First part of first and last part of second half-year. Counting as three term hours.* MR. RICHARDS.

MINERALOGY

1. Determinative Mineralogy. Laboratory work, six hours a week; open to students who have taken Chemistry 1, 2, and 3. *Tu., Th., Sat., 10.45—12.45.* (1) MR. RICHARDS.

[2. Crystallography and Descriptive Mineralogy. Lectures, two hours a week; laboratory work, four hours a week; open to students who have taken Mineralogy 1. *Tu., Th., Sat., 10.45—12.45.* (2) *Counting as three term hours.* MR. RICHARDS.]

DRAWING AND SHOPWORK

PROFESSOR ANTHONY

Drawing

The object of the studies pursued in the department of Drawing is three-fold: first, a development of the theory of technical drawing; second, the acquirement of precision and rapidity in the execution of the work; third, a practical application of these principles in the fluent expression of mechanical ideas by means of graphic language. Practice in the attainment of the first is acquired by freehand and geometric drawing and the study of descriptive geometry. By means of progressive problems, in which nothing in the nature of a copy is permitted, the student is advanced to the consideration of point, line, and surface, from a purely analytic standpoint. The instruction in descriptive geometry is given by means of lectures and recitations, accompanied by frequent examinations in the freehand and instrumental construction of the problems. Rapidity of work being attainable only through precision, drawings are required to be executed with the greatest possible care and neatness. The theory and execution of a drawing having been mastered, together with the elements of kinematics, the student is directed to make such application of these principles to the illustration of mechanism as shall enable him to express his ideas graphically, in the most simple and direct manner. The machine drawings are made by such system as would be required in any

well-conducted drafting-room, and the most modern methods are employed in the execution of the work as to the forms of graphic expression that may be used. A progressive course in design is pursued preparatory to and in connection with thesis work.

In the statement below, each "hour" is the equivalent of one term hour of credit.

SUBJECTS

[For hours, see the Engineering program.]

1. Descriptive Geometry. Lectures, recitations, and drawing. *Three hours a week* (*second half-year*).
PROFESSOR ANTHONY AND MR. ASHLEY.

2. Technical Sketching. *One hour*† *a week* (*second half-year*).
PROFESSOR ANTHONY.

3. Mechanical Drawing. *Two hours** *a week for the year.*
PROFESSOR ANTHONY AND MR. ASHLEY.

4. Kinematics. *Three hours a week* (*first half-year*).
PROFESSOR ANTHONY.

5. Machine Drawing (elementary). *Two hours*† *a week* (*second half-year*).
ASSISTANT PROFESSOR C. H. CHASE.

6. Machine Drawing (advanced). *Two hours** *a week* (*first half-year*).
ASSISTANT PROFESSOR C. H. CHASE.

7. Elements of Design. *One hour** *a week* (*second half-year*).
PROFESSOR ANTHONY.

8. Machine Design (advanced). *Two hours** *a week* (*first half-year*).
PROFESSOR ANTHONY.

SHOPWORK

Work in the shops is designed to give practical knowledge of mechanical processes and of materials of construction. Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer. The course of work in the shops maintains a close relation with the courses in drawing and design, much of the

* Each hour represents a three-hour period.
† Each hour represents a two-hour period.

work in design being carried to completion in the shops from drawings prepared in the drafting-room.

SUBJECTS

[For hours, see the Engineering program.]

1. Carpentry, Turning, and Moulding. *Two hours* a week (first half-year).* MR. STEWART.

2. Pattern-making. *One hour* a week (second half-year).* MR. STEWART.

3. Forging. *One hour* a week (second half-year).* MR. STEWART.

4. Vise and Machine Tools. *Two hours* a week (second half-year).* ASSISTANT PROFESSOR C. H. CHASE.

5. Project Work. *Three hours* a week (second half-year).* ASSISTANT PROFESSOR C. H. CHASE.

CIVIL AND MECHANICAL ENGINEERING

PROFESSOR BRAY AND PROFESSOR SANBORN

Students who desire to elect engineering courses as collateral to their studies in Liberal Arts, or with a view of pursuing study in engineering after graduation, will find open to them the subjects outlined below. For all the subjects algebra, geometry, and trigonometry are an indispensable preparation. Fuller details, including the program hours, are given in this catalogue under the Department of Engineering.

SUBJECTS

1. Surveying. General field practice, computations, and plotting. *Two hours* a week (first half-year); two hours* a week (second half-year).* PROFESSOR SANBORN AND ASSISTANT PROFESSOR ROCKWELL.

2. Precise Surveying, Engineering Jurisprudence, Fire Protective Engineering, Hydrographic Surveying. *Two hours* a week.* PROFESSOR SANBORN.

3. Railroad Surveying. Field practice and office work; drawing and calculating. *Two hours* a week (first half-year).* PROFESSOR BRAY.

4. Railroad Engineering (to be taken with Engineering 3). *Three hours a week.* PROFESSOR BRAY.

5. Hydraulics. *Three hours a week (second half-year).* PROFESSOR SANBORN.

* See foot-note, page 90.

6. Pure Mechanics. *Three hours a week* (*first half-year*).
PROFESSOR SANBORN.

7. Applied Mechanics. *Three hours a week* (*second half-year*).
PROFESSOR BRAY.

8. Experimental Mechanics (laboratory). *One hour* a week* (*first half-year*). PROFESSOR SANBORN AND ASSISTANT PROFESSOR ROCKWELL.
One hour a week* (*second half-year*).
PROFESSOR BRAY AND ASSISTANT PROFESSOR ROCKWELL.

9. Steam Engine. Theory and practice in the management of engines and boilers, valve-setting, tests. *Three hours a week* (*first half-year*).
ASSISTANT PROFESSOR C. H. CHASE.

10. Steam Engineering. Thermodynamics and valve gears. *Three hours a week* (*second half-year*). PROFESSOR BRAY.

11. Highways. *One hour a week* (*second half-year*).
PROFESSOR BRAY

12. Masonry Construction. *Three hours a week* (*second half-year*).
PROFESSOR BRAY.

[13. Sanitary Engineering. *Three hours a week* (*second half-year*).
PROFESSOR SANBORN.]

14. Roofs and Bridges. *Three hours a week* (*first half-year*).
ASSISTANT PROFESSOR ROCKWELL.

15. Structural Design. *Two hours a week.*
ASSISTANT PROFESSOR ROCKWELL.

ELECTRICAL ENGINEERING

PROFESSOR HOOPER

To the student in the College of Letters who may desire to elect advanced work in electricity, the following subjects are offered. All require a good working knowledge of algebra, geometry, and trigonometry, while subjects 4 and 5 require a like acquaintance with calculus and differential equations.

All subjects in this department must also be preceded by Physics 4, or its equivalent.

SUBJECTS

[For hours, see the Engineering program.]

1. Dynamo-Electric Machinery. Recitations and lectures. *Three hours a week* (*second half-year*). PROFESSOR HOOPER.

2. Electrical Problems. *Two hours a week* (*second half-year*).
MR. ROLLINS.

* Each hour represents a three-hour period.

3. Electrical Laboratory (advanced course). *Three hours a week for the year.* PROFESSOR HOOPER.

4. Electricity: Alternating Currents. *Three hours a week for the year.* PROFESSOR HOOPER.

5. Electricity: Mathematical Treatment of Alternating Current Phenomena. *Three hours a week (first half-year).* PROFESSOR HOOPER.

6. Magnetism in Iron, Nickel, and Cobalt. *Three hours a week (second half-year).* PROFESSOR HOOPER.

7. Electrical Topics. Lectures by students. *Three hours a week (second half-year).* PROFESSOR HOOPER.

8. Dynamo Design. Calculations and Drawings. *Three hours a week (first half-year).* PROFESSOR HOOPER.

MUSIC

PROFESSOR LEWIS

The department of Music offers opportunities to gain a knowledge of musical history, and of the principles of composition, as a basis for practical work in music or in musical criticism. The subjects, Elements of Theory, Harmony, and General History of Music may well be taken by students who wish to cultivate their appreciation of music, but have no intention of preparing themselves for professional work in the art.

SUBJECTS

1. Elements of Theory. Lectures, practice, and analysis, with various text-books for reference. *Tu., 4.00.* PROFESSOR LEWIS.

Only acquaintance with musical notation and with the piano keyboard is required. Music 1 is introductory to Music 2.

[2. Harmony. Lectures and practical work, based on Chadwick's Manual of Harmony; collateral reading concerning the lives of Bach, Mozart, and Beethoven. *Tu., 3.00–4.00; Th., 3.00–5.00.* PROFESSOR LEWIS.]

An elementary knowledge of piano playing is required. Music 2 will be given in 1904–1905.

3. Sight-reading in Song, and Harmonic Analysis. *Th., 4.00.* PROFESSOR LEWIS.

Only those who have finished Music 2 may take Music 3. Work of the prominent composers of choral works in the eighteenth and nineteenth centuries will furnish the material for study in sight-reading. The harmonic analysis begun in Music 2 will be continued, with special attention

to the more difficult problems of modern music. B. Cutter's "Harmonic Analysis" will be used as a text-book.

4. Counterpoint, Single and Double. Lectures and practical work, based on the manuals of Jadassohn, Bridge, and others; collateral reading concerning the lives of Schubert, Schumann, Mendelssohn, and Wagner. *Tu., Th., Sat., 11.45.* PROFESSOR LEWIS.

A thorough theoretical knowledge of harmony, and facility in the harmonization of basses and choral melodies, are required of those who take Music 4. A full equivalent of Music 2 must have been done by students who wish to begin their college work with Music 4.

[5. Fugue, Canon, Musical Form, and the Elements of Orchestration. Lectures and practical work, with various manuals for class use and reference. *Tu., Th., Sat., 11.45.* PROFESSOR LEWIS.]

Students who elect Music 5 must have attained Grade A or B in Music 4, and must have given evidence of talent in melodic invention. Those who are admitted to the class are required to attend regularly during the year the public rehearsals or concerts of the Boston Symphony Orchestra, and at least eight concerts of chamber-music, as prescribed by the instructor.

6. General History of Music, from the earliest times to the present day, with especial attention to the period since the death of Palestrina. Lectures, with various treatises for reference. *Mon., Wed., Fri., 11.45.* (2) PROFESSOR LEWIS.

Music 6 will be a two-hour subject during 1903-1904, but the class occasionally will meet at the third of the assigned program hours.

[7. Special studies in Musical History, in Musical Criticism, or in the development of Musical Form. *Three hours a week.* PROFESSOR LEWIS.]

An equivalent of the work of Music 4, and an ability to read with facility German and French, are required of students who elect Music 7. The studies may be given in lectures, or may consist of individual work of students under the direction of the instructor.

[8. The Phenomena of Sound in their relation to Music and Musical Instruments. Lectures and experiments. *Mon., 4.00.* (2) PROFESSOR DOLBEAR.]

The first half-year's work in Physics 1 must have been done by those who elect Music 8. Music 8 will not be given until 1904–1905.

THE FINE ARTS

ASSISTANT PROFESSOR WHITTEMORE

The department of the Fine Arts stands collaterally with literature and music—offering an opportunity for the study of the history of painting, sculpture, architecture, and the minor arts. The subjects given are open to Sophomores, Juniors, and Seniors.

[1. The History of Greek Art, with an introduction on the Arts of Egypt, Assyria, and Phœnicia. *Mon., Wed., Fri., 9.45.*
ASSISTANT PROFESSOR WHITTEMORE.]

2. The Fine Arts of the Middle Ages and the Renaissance. *Mon., Wed., Fri., 9.45.* ASSISTANT PROFESSOR WHITTEMORE.

Fine Arts 2 may precede Fine Arts 1.

PHYSICAL TRAINING

DR. STROUD AND MISS CARVILL

Regular exercise in the gymnasium is required three hours a week of all undergraduate students for the two years following entrance, from November to April. The work is optional during the remaining years of the course. Preceding the practical work in the gymnasium, the Freshmen will be given a series of lectures on the hygiene of diet, bathing, exercise, and personal habits. The aim of the department is to secure the interest and participation of the students in such exercise and training as each and all need for corrective, hygienic, or recreative purposes. A healthy body, erect carriage, self-control, fearlessness, and muscular co-ordination are among the objects sought. In addition to class drills in free movements with wands, dumb-bells, and Indian clubs, and exercises in squads, on the various kinds of mixed apparatus, a special exercise card is made out for each student, as the result of a careful medical examination, measurement, and strength test. Out-door sports are fostered, but care is taken that the students do not exercise beyond their capacity, it being the intention to make the physical training of such character that the weakest as well as the strongest can engage in it with profit.

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* this year are bracketed in department statements
The prefixed w signifies whole year; F, first half-year; S, second half-year
M Tu W Th F S indicate days for two-period and one-period subjects

MONDAY, WEDNESDAY, FRIDAY

	8.45	9.45	10.45	11.45
CAPEN				
LEONARD				
SCHNEIDER				
BOLLES	Hst w2		Hst w3	
SHIPMAN				
DOLBEAR			Phs w1	
HARMON				
FAY	Ger w6		Ger w5	
TOUSEY			Phl F6, S7	Phl w14
KNIGHT				
WOODBRIDGE				
KINGSLEY				Bio F5 M *lect*
MICHAEL				
CUSHMAN		Phl F10,S11,12,13	Phl w9	
LEWIS	Frn w2	Frn w1		Mus S6
MAULSBY	Eng F17	Eng w25, 26	Eng w19, 20	
DURKEE			*Chm* S8 WF	
DENISON				Lat w3, 4
EVANS	PbL F4, 6, S5		Hst w1	PbL F1, S2, 7
H. G. CHASE	Phs S3 W *lect*			Phs S2, F4
METCALF	PlS F180			
WADE		Grk w1		
WHITTEMORE	Eng S18	FnA w1, 2		Eng w10, 15
WREN		Mth S7		Mth F4
LAMBERT		*Bio* w7 WF	*Bio* w7 WF	*Bio* w7 WF *lect*
RANSOM		Mth F6	Mth w14	Mth S5
COLWELL	Ger w2	Ger w1		
PRICE		PlS w2		
RICHARDS			Geo w2	Geo w2
TURNER				
ECKSTEIN		Chm F10		*Chm* S11 MW

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* this year are bracketed in department statements.
Subjects in Roman type occupy three periods
Subjects in *Italic* type occupy two periods; in **Boldface** type, one period

MONDAY, WEDNESDAY, FRIDAY

	2.00	3.00	4.00	5.00*
CAPEN				
LEONARD				
SCHNEIDER				
BOLLES				
SHIPMAN				
DOLBEAR			**Mus** s8 M	
HARMON		Hst F12	Hst W11	
FAY	Frn W4			Frn W6
TOUSEY				
KNIGHT				
WOODBRIDGE				
KINGSLEY	*Bio* W2, *3*, F5 MF	*Bio* W2, *3*, F5 MF	*Bio* W2, *3* MF *lec*	**ScGer**, Geo FS3
MICHAEL				Chm 12, 13, 14
CUSHMAN				
LEWIS		Frn W5		Mus W7
MAULSBY	*Eng* W11 MF W12			Eng W28
DURKEE	*Chm* W1 WF *lect.*; *also* 2–5, *Chm*		W4, 5 MF, F9 M	*Chm* S65
DENISON		Lat W2		ClA F1, 3, S5
EVANS		Hst F4, 6, S5, 7		*Hst* W15
H. G. CHASE	*Phs* W5 MF	*Phs* W5 MF	*Phs* W5 MF	*Phs* W5 MF
METCALF			PlS S7	
WADE	Grk W2			ClA F2, 4, S6
WHITTEMORE				Eng F23
WREN				*Mth* S11
LAMBERT	*Bio* W7 WF	*Bio* W7 WF		
RANSOM				
COLWELL				
PRICE				
RICHARDS				Geo S1
TURNER	**Chm** W1 M	**Chm** W1 M	**Chm** W1 M	
ECKSTEIN				

*Hours in this column are subject to re-assignment during the opening week

Assignments for current year are given under the statements of the respective departments in the complete catalogue

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* this year are bracketed in department statements.
The prefixed W signifies whole year; F, first half-year; S, second half-year
M Tu W Th F S indicate days for two-period and one-period subjects

TUESDAY, THURSDAY, SATURDAY

	8.45	9.45	10.45	11.45
CAPEN		PbL F3		
LEONARD				Eng W27
SCHNEIDER	Grk W4	Grk W5		
BOLLES				
SHIPMAN			Phl F3, S4	Eng S24
DOLBEAR		*Phs* S8 Tu Th		
HARMON				
FAY	Ger W3		tal W1	
TOUSEY			Phl S8	
KNIGHT	Hst F13	Hst W14		Phl W15
WOODBRIDGE				Heb W1
KINGSLEY				*Bio* F1 TuTh, S4
MICHAEL				
CUSHMAN		Phl F1, 2, S5		Ped S1
LEWIS	Frn W3			Mus W4, 5
MAULSBY	Eng F13, S14		Eng F1, S7	
DURKEE	8.45–11.45 : **Chm** F2, S3, W4, 5S ; .		. . . *also*, 9.45–	12.45 ; **Chm** 1, Tu
DENISON	Lat W1a	Lat W1b		
EVANS				
H. G. CHASE				
METCALF	PlS F4, S5	PlS W6	PlS W1	
WADE		Grk W1		Grk W3
WHITTEMORE			Eng F16, S2	
WREN				
LAMBERT				*Bio* S1 TuTh
RANSOM	Mth F1a, S3	Mth F1b, S2		
COLWELL				Ger W4
PRICE				
RICHARDS			Min F1, S2	Min F1, S2
TURNER		**Chm** W1 Tu	**Chm** W1 Tu	**Chm** W1 Tu
ECKSTEIN				

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* this year are bracketed in department statements.
Subjects in Roman type occupy three periods
Subjects in *Italic* type occupy two periods; in **Boldface** type, one period

TUESDAY, THURSDAY

	2.00	3.00	4.00	5.00*
CAPEN				
LEONARD				
SCHNEIDER				
BOLLES		*Hst* F8, S9		
SHIPMAN		*Eng* F5		Eng F8
DOLBEAR		*Ast* F1	*Phs* F6, S7	
HARMON				
FAY				
TOLMAN				
KNIGHT				
WOODBRIDGE				Heb W2
KINGSLEY	*Bio* F1, S4	*Bio* F1, S4		Bio F8S6, W8
MICHAEL				Chm 15,16,17
CUSHMAN				
LEWIS		*Mus* W2	**Mu** W1Tu, 2,3Th	
MAULSBY	*Ora* S7			
DURKEE	*Chm* F2, S3,7	*Chm* F2, S3,7	*Chm* F2, S3, 7	
DENISON	**Lat** W5 Tu, 6 Th			**Lat** W7, F8, S9,10
EVANS				
H. G. CHASE	*Phs* S3	*Phs* S3	*Phs* S3	
METCALF				PlS S3, W8
WADE				**Grk** W6, 7, S8, 9
WHITTEMORE	**Ora** W1 Th			**Ora** W2, 6, 8
WREN				Mth F12, S13
LAMBERT	*Bio* W1	*Bio* W1		
RANSOM				Mth F9, S10
COLWELL				*Ger* W3b
PRICE				
RICHARDS				Geo F8S3, 4
TURNER				
ECKSTEIN				

* Hours in this column are subject to re-assignment during the opening week

Assignments for current year are given under the statements of the respective departments in the complete catalogue

Courses in Science

The special courses in Science lead to the degree of Bachelor of Science. They are intended for graduates of high schools who wish to prepare themselves for specialized scientific work. Like the Engineering courses, they are placed upon a technical basis, and far less latitude is allowed the student in the choice of subjects than in the course in Arts, the election being made when the course is chosen. In addition to the studies given below for each course, students must elect other studies so as to make the total one hundred and twenty-eight term hours.

COURSE IN GENERAL SCIENCE

PROFESSOR KINGSLEY

Freshman Year

English 1. The Theory and Practice of Composition. (*First half-year.*) See page 60.

English 2. A Study of Expression. (*Second half-year.*) See page 60.

German 1. Elementary German. See page 64.

Or **German 2.** Intermediate German. See page 64.

French 1. Elementary French. See page 65.

Or **French 2.** Intermediate French. See page 65.

The order in which French and German are followed depends upon the language submitted for admission to the College. A student admitted with French will take French 2 and German 1, or, with German, will take German 2 and French 1.

Physics 1. General Physics. See page 82.

Chemistry 1. General Chemistry. See page 85.

Biology 1. General Biology. See page 87.

Physical Training.

Sophomore Year

German 2. As above.

Or **German 3.** For the rapid reading of modern prose. (*First half-year.*) See page 64.

And **Biological German.** Reading of some important biological work. *Two hours a week.* (*Second half-year.*)

French 2. (For those entering with German.)

Biology 2 or 3. General Biology. See page 87.

Mathematics 1, with 2 or 3. Algebra, Geometry, Trigonometry. See page 80.

Chemistry 2. Qualitative Analysis. See page 85.

Chemistry 3. Qualitative Analysis. See page 85.

Physical Training.

Junior Year

German 3 and Biological German (for those entering with French), as above.

Physics 3. Physical Laboratory. See page 82.

Chemistry 10. Organic Chemistry. See page 86.

Biology 2 or 3. See page 87.

Biology 4. Elementary Physiology. See page 87.

Biology 5. Histology. See page 87.

Senior Year

Geology 1. Physiography. See page 88.

Philosophy 1 or 2. Introductory subject. (*First half-year.*) See Page 72.

Philosophy 5. Psychology. (*Second half-year.*) See page 73.

Biology 7. Botany. See page 88.

Mineralogy 1. Determinative Mineralogy. See page 89.

Geology 2. Geology. See page 88.

Special work (six term hours) in Biology, Geology, Chemistry, or Electricity.

COURSE IN BIOLOGY

PROFESSOR KINGSLEY

Freshman Year

As in the Freshman year of the course in General Science.

Sophomore Year

As in the Sophomore year of the course in General Science, except Mathematics.

Junior Year

German 3B. (*First half-year.*) **Biological German.** (*Second half-year*, for those entering with French.) **Biology** 2 or 3, and 4, and 5, and Geology, as in the Senior year of the course in General Science.

Philosophy 1 (or 2) and 5, as in the Senior year of the course in General Science.

Chemistry 10. Organic Chemistry. See page 86.

Senior Year

Mineralogy 1 and Geology 2, as in the Senior year of the course in General Science.

Biology 7. Botany. See page 88.

Biology 8. Special Research in Biology, including dissertation. *Twelve hours.*

MEDICAL PREPARATORY COURSE

PROFESSOR KINGSLEY

Freshman Year

As in the Freshman year of the course in General Science.

Sophomore Year

As in the Sophomore year of the course in Biology.

Junior Year

As in the Junior year of the course in Biology.

Senior Year

Philosophy 3. Logic, especially Deductive. See page 73.

Philosophy 6. Ethics, the Theory of Morals. See page 73.

Human Anatomy and Physiology. (At Tufts Medical School.)

Medical Chemistry. (At Tufts Medical School.)

COURSE IN CHEMISTRY

PROFESSOR DURKEE

Freshman Year

English 1. The Theory and Practice of Composition. (*First half-year.*) See page 60.

English 2. A Study of Expression. (*Second half-year.*) See page 60.

German 1. Elementary German. See page 64.

Or **German 2.** Intermediate German. See page 64.

Those entering with German will take German 2. Others will take German 1.

Mathematics 1, with 2 or 3. Algebra, Solid Geometry, and Trigonometry. See page 80.

Physics 1. General Physics. See page 82.

Chemistry 1. General Chemistry. See page 85.

Mechanical Drawing. *Two hours a week* (*first half-year*). See page 88.

Elective. *Three hours a week* (*second half-year*).

Physical Training.

Sophomore Year

German 2. As above.

Or **French 1.** Elementary French. See page 65.

French 1 will be taken by those who entered without French. Others will take German 2.

Physics 3. Physical Laboratory. See page 82.

Chemistry 2. Basic Qualitative Analysis. See page 85.

Chemistry 3. Qualitative Analysis of Acids, Salts, Commercial and Natural Products. See page 85.

Chemistry 4. Quantitative Analysis, Gravimetric and Volumetric; Analysis of Minerals. See page 85.

Chemistry 10. Organic Chemistry. See page 86.

Chemistry 11. Theoretical Chemistry. See page 86.

Physical Training.

Junior Year

Chemistry 5. Quantitative Analysis (advanced). See page 85.

Mineralogy 1. See page 89.

Chemistry 8. Metallurgy. See page 86.

Chemistry 12. Theoretical and Inorganic Chemistry (advanced). See page 86.

Chemistry 13. Organic Chemistry (advanced). See page 86.

Chemistry 14. Laboratory work in Inorganic Preparations. See page 86.

Chemistry 15. Laboratory work in Organic Analysis. See page 86.

Biology 1. General Biology. See page 87.

Political Science 1. Elements of Political Economy, and Practical Problems. See page 79.

Senior Year

Biology 4. Elementary Physiology. See page 87.

Chemistry 7. Fire Assay. See page 86.

Chemistry 9. Gas Analysis. See page 86.

Chemistry 13. Organic Chemistry (advanced). See page 86.

Elective. *Six hours a week.*

Research and Thesis. *Four hour a week (first half-year); ten hours a week (second half-year).*

DEPARTMENT OF ENGINEERING

Faculty of the Department of Engineering

ELMER H. CAPEN, A.M., D.D., LL.D., PRESIDENT . 8 Professors Row

GARDNER C. ANTHONY, A.M., DEAN . . . . . 14 Professors Row
Professor of Technical Drawing

HARRY GRAY CHASE, B.S., SECRETARY . . . . . 2 Curtis Avenue
Assistant Professor of Physics

CHARLES D. BRAY, C.E., A.M. . . . . 98 Professors Row
Professor of Mechanical Engineering

AMOS E. DOLBEAR, M.E., PH.D., LL.D. . . . 134 Professors Row
Professor of Physics and Astronomy

CHARLES E. FAY, A.M., LITT.D. . . . . 92 Professors Row
Wade Professor of Modern Languages

WILLIAM L. HOOPER, A.M., PH.D. . . . . 124 Professors Row
Professor of Electrical Engineering

FRANK W. DURKEE, A.M. . . . . 38 Professors Row
Professor of Inorganic Chemistry

FRANK B. SANBORN, C.E., M.S. . 10 Buena Vista Park, Cambridge
Professor of Civil Engineering

HENRY C. METCALF, A.B., PH.D. . . . . 92 Professors Row
Professor of Political Science

FRANK G. WREN, A.M. . . . . 16 Professors Row
Professor of Mathematics

CHARLES H. CHASE, S.B. . . . . Stoneham
Assistant Professor af Steam Engineering

EDWARD H. ROCKWELL, S.B. . . . 133 Powder House Boulevard
Assistant Professor of Civil Engineering

SAMUEL C. EARLE, A.M. . . . . 9 Electric Avenue
Assistant Professor of English

THOMAS WHITTEMORE, A.B. . . . . ΘΔX House
Assistant Professor of English

CHARLES C. STROUD, A.B., M.D. . . . Allen House, Sawyer Ave.
Instructor in Physical Training

HAROLD J. TURNER, PH.D. . . . . 33 Emery Street
Instructor in Chemistry

OSKAR ECKSTEIN, PH.D., P.D. . . . . 28 Professors Row
Instructor in Chemistry

EDWIN B. ROLLINS, B.S. . . . . 1 West Hall
Instructor in Electrical Engineering

GEORGE F. ASHLEY . . . . . 11 Laurel St., Somerville
Instructor in Drawing

CHARLES E. STEWART, S.B. . . . 34 Emery St., Medford Hillside
Instructor in Shopwork

PHILIP M. HAYDEN, A.B. . . . . Dean Hall, 6
Instructor in French

COMMITTEE ON PROMOTIONS

Dean Anthony, *Chairman;* Professors Hooper and Wren.

Department of Engineering

The department offers courses of four years in CIVIL ENGINEERING, MECHANICAL ENGINEERING, ELECTRICAL ENGINEERING, AND CHEMICAL ENGINEERING, each leading to the degree of Bachelor of Science. Each course is arranged to permit of considerable freedom of election in each of the other courses. Election may also be made in the College of Letters.

While most of the instruction is given in engineering subjects, leading to a professional degree, the primary object of the department is to give a broad education which shall tend toward the highest development of every student who may seek instruction through any of its courses.

The Department of Engineering is open to all earnest students, whether they are candidates for a degree, or desire special courses. Through its scientific fitting school it offers unusual advantages to those whose previous preparation has been in the field of practice rather than theory, and whose training in the rudimentary branches may be deficient.

REQUIREMENTS FOR ADMISSION

Candidates for admission to the Engineering Department must have received adequate preparation in certain required subjects, as follows:—

Elementary English;	***One Elementary Foreign Language;**
Algebra;	**Plane and Solid Geometry.**

From the following list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group aggregating three units:

Elementary History, 2	**Mechanical Drawing, 1**
Physics, 1 or 2	**Freehand Drawing, 1**
Chemistry, 1 or 2	**Shop Work, 1**

Detailed statements concerning these admission requirements will be found in pages 41 to 53.

*Students will find it an advantage to present both French and German. Preparatory work in Modern Languages above the entrance requirements may be counted toward the degree of B.S. in engineering on the conditions stated on page 142.

EXPENSES

The following estimates represent the fixed annual expenses:

Tuition	$120.00	$120.00
Physical culture, including gymnasium and grounds	10.00	10.00
Reading-room	1.00	1.00
Half room-rent	20.00	91.00
Hospital	2.00	2.00
Board, $3.50 to $5.00 a week (36 weeks)	126.00	180.00
Total	279.00	$404.00

SPECIAL CHARGES. Chemical Laboratory charges for breakage (average)	$4.00
Chemical Laboratory charges for chemicals	8.00
Instruments, books, and general supplies (if new)	15.00 to 25.00
Non-resident students not hiring rooms at the college are subject to a fixed charge of	10.00

As an aid toward meeting expenses, there are many opportunities for work in the shops, laboratories, and drafting rooms, for which a fixed rate of compensation is established. Applications for these positions should be made to the Dean, and the appointments must be confirmed by the Engineering Faculty.

For a list of available scholarships, and for further regulations concerning expenses, consult the table of contents under "General Information."

The Degree of Civil Engineer, Electrical Engineer, Mechanical Engineer, or Master of Science will be conferred upon Bachelors of Science in Civil, Electrical, or Mechanical Engineering, who shall satisfactorily pursue advanced professional study at the College for one year, under the conditions required of candidates for the Degree of Master of Arts; or who shall present suitable evidence of three years of professional work, one year of which must be in a position of responsibility, in which case a certain amount of professional study will be assumed. A thesis based upon this study will be required. For the detailed conditions under which these degrees are granted, consult the table of contents under the "Graduate Department."

Further information concerning the Department of Engineering will be found in a special pamphlet, to be obtained by addressing Dean Anthony, Tufts College, Mass.

Courses of Instruction

It is believed that four years spent mainly upon technical subjects, yet providing opportunity for such language study as will enable the student to become familiar with foreign books of scientific value, will furnish a solid foundation for advanced theoretical attainment and professional skill. Considerable freedom is allowed in the choice of electives during the Junior and Senior years.

The program is so arranged as to require of each student about fifty hours of work per week. This includes the time necessary for the recitation and its preparation, together with hours for laboratory work.

The subjects for instruction in the Freshman year are alike for all courses. The outlines of the courses for the three following years are tabulated under the heads of Civil Engineering, page 115, Mechanical Engineering, page 117, Electrical Engineering, page 119, Chemical Engineering, page 121.

The figures in the column at the right indicate the number of the subject. The details of these studies will be found on pages 122 to 143.

FRESHMAN YEAR

[Alike for all courses.]

First Term	No.	Second Term	No.
Algebra	1	Analytical Geometry	5
Trigonometry	3	Descriptive Geometry	21
Mechanical Drawing	20	Mechanical Drawing	20
Freehand Drawing	22	Technical Sketching	23
Carpentry, Turning, and Foundry	40	Pattern Making	42
Physics	70	Physics	70
English	140	English	141
French or	161	French or	161
German	166	German	166
Physical Training	185	Physical Training	185

CIVIL ENGINEERING

The studies which underlie general engineering and science —mathematics, drawing, modern languages, physics, and chemistry—dominate the course during the first two years, but during this period the student also pursues a practical training in courses of shopwork and field surveying.

In the last two years instruction follows in precise surveying, hydrography, topography, and railroad surveying, about two-thirds of the time being spent in actual field practice, for which the college location affords excellent advantages; mechanical properties of timber, cement, iron, and steel, are studied in the class room and in the testing laboratory; outline and detail designs for roofs, bridges, arches and other structures are made in a well-equipped drafting room; the methods of water purification, water supply for towns, systems of drainage, sewerage, and sewage disposal receive careful attention by general study and visits to some of the excellent municipal plants near at hand.

Elective studies are offered in Junior and Senior year which permit the student to take important courses in mathematics, chemistry, or electrical and mechanical engineering. By this means his knowledge of other engineering subjects may be extended, and he will be fitted to follow general engineering practice, or to choose intelligently some branch of the profession in which he can advisedly specialize. Specialization is thus possible during these last two years, but in no way is it forced upon the student.

In fact a comprehensive course of study offers many advantages; and present demands in bridge, structural, hydraulic, and sanitary engineering, fire protection, general surveying, mill and masonry construction, are such that the course in civil engineering which includes these subjects must be a broad one, enabling its graduates to advance rapidly in numerous fields of work. This department has endeavored to shape its methods of instruction so as to meet satisfactorily these requirements of the profession of civil engineering.

CIVIL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 113.

SOPHOMORE YEAR

First Term	No.	Second Term	No.
Calculus	7	Calculus	7
Mechanism	25	Forging	44
General Chemistry	50	General Chemistry	50
Surveying	90	Physical Laboratory	72
English	142	Surveying	91
French or	162	English	143
German	167	French or	162
Physical Training	185	German	167
		Physical Training	185
		Machine Drawing (*elective*)	26

JUNIOR YEAR

First Term	No.	Second Term	No.
Applied Calculus	8	Fire Protection—Hydrography	93
Qualitative Analysis	52	Masonry or Sanitary Engineering	111 or 109
Precise Surveying—Jurisprudence	92		
Pure Mechanics	112	Applied Mechanics	113
Experimental Mechanics	115	Experimental Mechanics	116
Steam Engine	120	Structural Design	117
* *Two of the following electives:*		* *Three of the following electives:*	
Machine Drawing (advanced)	27	Differential Equations	9
Machine Shop	45	Least Squares	11
Mineralogy	59	Machine Design	28
† Electrical Laboratory	73	Qualitative Analysis	53
Electricity and Magnetism	74	†Electrical Laboratory	73
English		Dynamo-Electric Machinery	77
Modern Languages		Steam Engineering	121
		Geology	130
		English	
		Modern Languages	

SENIOR YEAR

First Term	No.	Second Term	No.
Railroad Surveying	94	Highways	99
Railroad Engineering	95	Hydraulics	110
Roofs and Bridges	97	Sanitary Engineering or Masonry	109 or 111
Political Economy	180	Thesis	135
* *Two of the following electives:*		* *Three of the following electives:*	
Mathematics		Mathematics	
Mineralogy	59	Quantitative Analysis	61
Quantitative Analysis	61	Applied Chemistry	65
Gas Analysis	63	Assaying	67
Applied Mechanics	114	Telegraph and Telephone	87
Structural Design	118	Railroads—Economic Locations	96
Engineering Laboratory	123	Bridge Design	98
English		Steam Engineering	121
Modern Languages		Geology	130
		English	
		Modern Languages	

* Electives must be approved by the Department.
† No. 73 must be taken for entire year, and preceded by, or taken with, 74.

MECHANICAL ENGINEERING

The course of instruction in mechanical engineering relates particularly to machinery,—its design, construction, and operation. The first two years are devoted to the preparatory studies common to all engineering courses, and include mathematics, physics, chemistry, drawing, and language, all of which have an important bearing upon the successful pursuit of the more technical subjects. Technical drawing and descriptive geometry receive much attention during the first year, and are more completely developed in the advanced work in mechanism and design.

In the last two years the technical work of the course is developed. It includes mechanics, both pure and applied, chemical analysis, and the properties of engineering materials, particularly iron and steel. The laboratory practice includes work in the physical, chemical, electrical, mechanical, and steam-engineering laboratories. In machine design each student prepares complete working drawings of some machine, or part of a machine. Shop work is carried through four terms, and includes carpentry, wood-turning, moulding, pattern-making, forging, vise and machine tool-work.

The systematic study of steam and its application occupies a considerable part of the Junior and Senior years. The principles involved in the generation and application of power, the management of boilers and engines, the setting of valves and use of the indicator, are carefully considered. This is followed by work in thermodynamics, including the mechanical theory of heat and the properties of steam and gases. Steam engineering includes the study of the steam engine, compound and multiple expansion, and of boilers of various types; determination of proportions for developing a required power; computation of sizes required for strength and endurance; the effect and balance of reciprocating parts, and the various types of valve motions. Engine and boiler testing constitute an important part of this course.

MECHANICAL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 113.

SOPHOMORE YEAR

First Term	No.	Second Term	No.
Calculus	7	Calculus	7
Mechanism	25	Machine Drawing	26
General Chemistry	50	Forging	44
Surveying	90	General Chemistry	50
English	142	Physical Laboratory	72
French or	162	English	143
German	167	French or	162
Physical Training	185	German	167
		Physical Training	185
		Surveying (*elective*)	91

JUNIOR YEAR

First Term	No.	Second Term	No.
Applied Calculus	8	Differential Equations	9
Machine Drawing	27	Machine Design	28
Qualitative Analysis	52	Machine Shop	45
Electricity and Magnetism	74	Applied Mechanics	113
Pure Mechanics	112	Experimental Mechanics	116
Experimental Mechanics	115	Steam Engineering	121
Steam Engine	120	* *Two of the following electives:*	
* *One of the following electives:*		Qualitative Analysis	53
Electrical Laboratory	73	Metallurgy	57
Precise Surveying—Jurisprudence	92	Electrical Laboratory	73
English		Dynamo-Electric Machinery	77
Modern Languages		Masonry	111
		English	
		Modern Languages	

SENIOR YEAR

First Term	No.	Second Term	No.
Machine Design	29	Engineering Laboratory	123
Applied Mechanics	114	Hydraulics	110
Steam Engineering	122	Thesis	135
Engineering Laboratory	123	* *Two of the following electives:*	
Political Economy	180	Mathematics	
* *Two of the following electives:*		Quantitative Analysis	61
Mathematics		Applied Chemistry	65
Quantitative Analysis	61	Electricity	83
Gas Analysis	63	Topics	85
Electricity	82	Telegraph and Telephone	87
Dynamo Design	88	Masonry	111
Roofs and Bridges	97	Structural Design	117
Structural Design	118	Bridge Design	98

* Electives must be approved by the Department.

ELECTRICAL ENGINEERING

The aim of the course in electrical engineering is to fit men to deal intelligently with electrical problems likely to be presented to the practical engineer.

With this end in view, mathematics and drawing are pursued through nearly the entire course. Physics and mechanics, both pure and applied, receive much attention, while more than half of the Senior year is devoted to the study of electricity by means of practical work in the electrical laboratory, together with recitations and lectures on the principles involved. The purely electrical work extends over the Junior and Senior years of the course, the Junior year being devoted to the more elementary theory and the practice of the simpler tests and measurements, the Senior year to the more advanced theory and the practice of the more complex tests and measurements.

The calibration and standardization of electrical instruments receive due attention. The magnetic properties of irons, armature reactions in dynamos, the efficiency of electrical machinery, and the location of losses are carefully studied. The theory of shunts and the Wheatstone bridge leads to the consideration of the distribution of current and potential in a network of conductors.

Much time is given to design and construction. Most students during their course construct or assist in the construction of some piece of electrical machinery of commercial dimensions.

The theory of alternating currents, both single and polyphase, is fully developed; and the many important practical problems thus evolved are carefully treated, both by numerical computation and by graphic representation.

A few weeks are devoted to the study of Maxwell's theory and its experimental confirmation by Hertz.

ELECTRICAL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 113.

SOPHOMORE YEAR

First Term	No.	Second Term	No.
Calculus	7	Calculus	7
Mechanism	25	Machine Drawing	26
General Chemistry	50	Forging	44
Surveying	90	General Chemistry	50
English	142	Physical Laboratory	72
French or	162	English	143
German	167	French or	162
Physical Training	185	German	167
		Physical Training	185
		Surveying (*elective*)	91

JUNIOR YEAR

First Term	No.	Second Term	No.
Applied Calculus	8	Differential Equations	9
Qualitative Analysis	52	Machine Design	28
Electrical Laboratory	73	Electrical Laboratory	73
Electricity and Magnetism	74	Electricity	76
Pure Mechanics	112	Dynamo-Electric Machinery	77
Experimental Mechanics	115	Applied Mechanics	113
Steam Engine	120	Experimental Mechanics	116
* *One of the following electives:*		* *One of the following electives:*	
Machine Drawing	27	Mathematics	
Precise Surveying—Jurisprudence	92	Machine Shop	45
English		Qualitative Analysis	53
Modern Languages		Metallurgy	57
		Fire Protection—Hydrography	93
		† Sanitary Engineering	109
		Masonry	111
		Steam Engineering	121
		English	
		Modern Language	

SENIOR YEAR

First Term	No.	Second Term	No.
Electrical Laboratory	79	Electrical Laboratory	79
Electricity	82	Electricity	83
Political Economy	180	Telegraph and Telephone	87
* *Three of the following electives:*		Hydraulics	110
Mathematics		Thesis	135
Machine Design	29	* *Two of the following electives:*	
Quantitative Analysis	61	Mathematics	
Gas Analysis	63	Quantitative Analysis	61
Mineralogy	59	Applied Chemistry	65
Mathematics of Alternating Currents	84	Assaying	67
Dynamo Design	88	Electrical Topics	85
Railroad Engineering	95	Magnetism	86
Applied Mechanics	97	Highways	99
Roofs and Bridges	114	† Sanitary Engineering	109
Engineering Laboratory	231	Masonry	111

* Electives must be approved by the Department.

† Omitted in 1903—1904.

CHEMICAL ENGINEERING

The course in chemical engineering covers a period of four years, and leads to the degree of Bachelor of Science in Chemical Engineering.

The subjects in this course have been arranged to give the training in mathematics, physics, chemistry, and mechanical engineering that will assist the graduates of the department in solving the mechanical and chemical problems that present themselves when chemistry is applied in practical ways. Subjects intended for general training, the greater part of the pure mathematics and the less technical engineering subjects, have purposely been introduced early in the course. This arrangement allows much time for the study of subjects in chemical and advanced mechanical engineering in the last two years. The mathematical, physical, and general engineering subjects, as well as subjects that are intended for general culture, correspond, for the most part, to those of the course in mechanical engineering.

In chemistry the subjects are numerous enough to train the student thoroughly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the different branches of chemical analysis, and to make him familiar with many of the practical applications of chemistry. The chemical and engineering subjects are taught, so far as it is possible, in the laboratories, and excursions are made from time to time to plants where technical chemical operations are performed.

Young men who graduate from the course in chemical engineering find employment in constructing and operating plants where chemistry is applied commercially, such as gas-works, dye-works, bleacheries, paper and pulp mills, acid and alkali manufactories.

CHEMICAL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 113.

SOPHOMORE YEAR

FIRST TERM	No.	SECOND TERM	No.
Calculus	7	Calculus	7
Mechanism	25	Machine Drawing	26
General Chemistry	50	Forging	44
Surveying	90	General Chemistry	50
English	142	Physical Laboratory	72
French or	162	English	143
German	167	French or	162
Physical Training	185	German	167
		Physical Training	185

JUNIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Applied Calculus	8	Differential Equations	9
Qualitative Analysis	52	Qualitative Analysis	53
Organic Chemistry	55	Metallurgy	57
Electrical Laboratory	73	Electrical Laboratory	73
Electricity and Magnetism	74	Applied Mechanics	113
Pure Mechanics	112	Experimental Mechanics	116
Experimental Mechanics	115	* *Two of the following electives:*	
Steam Engine	120	Machine Shop	45
		Dynamo-Electric Machinery	77
		† Sanitary Engineering	109
		Masonry	111
		Structural Design	117

SENIOR YEAR

FIRST TERM	No.	SECOND TERM	No.
Machine Drawing	27	Quantitative Analysis	61
Mineralogy	59	Applied Chemistry	65
Quantitative Analysis	61	Assaying	67
Gas Analysis	63	Theoretical Chemistry	69
Political Economy	110	Hydraulics	180
* *Three of the following electives:*		Thesis	135
Mathematics		* *One of the following electives:*	
Electricity	82	Mathematics	28
Roofs and Bridges	97	Machine Design	109
Applied Mechanics	114	† Sanitary Engineering	111
Structural Design	118	Masonry	117
		Structural Design	

* Electives must be approved by the Department.

† Omitted in 1903-1904.

Departments

MATHEMATICS

The required work in mathematics covers the first three years of the course. During this period the subjects pursued are treated with special reference to the demands of the engineering profession. The instruction, while having this end in view, endeavors to train the mathematical faculties so that the student may acquire the ability for research work. On this account, as the course progresses, the method of instruction varies gradually from text-book work to lectures by the instructor.

The extent of the course in the required branches is limited to subjects of importance to engineers: viz., in Algebra (1) the subjects usually found in college algebras previous to the theory of equations; in Trigonometry (3) the ordinary formulæ of relations between angles, and their applications in the solution of right and oblique triangles; in Analytic Geometry (5) the properties of the straight line and the conic sections; in Calculus (7) (8) the most important principles, such as are embodied in Osborne's Calculus supplemented by a course of lectures on the application of the subject to physical and mechanical phenomena; in Differential Equations (9) the solution and geometrical interpretation of total differential equations of first and second orders.

To those who desire additional work in the department of mathematics the following list of electives is offered: Spherical Trigonometry (4) Theory of Least Squares (10) and Determinants (11). These subjects are treated so as to render the knowledge of practical value to the engineer. For those pursuing graduate study Vector Analysis (12) and the Theory of the Potential Function (13) are offered as instruments for investigating the more complex physical phenomena.

MATHEMATICS

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
1	Algebra	1	1	4	1	Wren	C E M Ch
3	Plane Trigonometry	1	1	2	1	Wren	E E M Ch
4	Spherical Trigonometry	4	1	3	1	Ransom	Elective
5	Plane Analytic Geometry	1	2	3	1	Wren	C E M Ch
7	Differential and Integral Calculus	2	1, 2	3	1	Wren	C E M Ch
8	Applied Calculus	3	1	2	1	Rockwell	C E M Ch
9	Differential Equations	3	2	2	1	Wren	E M Ch
10	Theory of Determinants	4	1	3	1	Wren	Elective
11	Theory of Least Squares	3 or 4	2	2	1	Wren	Elective
12	Vector Analysis	4	1	3	1	Wren	Elective
13	Theory of the Potential Function	4	2	3	1	Wren	Elective

DRAWING

The threefold object of the studies pursued in the department of drawing is: first, the acquirement of precision and rapidity in the manipulation of instruments, together with the development of the theory of technical drawing; second, a study of the technique of graphic expression as employed in the modern drafting-room; third, a practical application of the preceding to the investigation of problems susceptible of a graphic solution, including the principles of machine design.

The work in Mechanical Drawing (20) comprises geometrical drawing, the various systems of projection, graphic solution of conic sections, tinting, shading, tracing, the helix and its application to screw-threads and bolts. Lettering and Technical Sketching (23) are taught at the same time as a necessary preparation for the machine and topographical drawing.

Descriptive Geometry (21) is taught by means of lectures, recitations, and the graphic solution of a great number of problems. The study includes the elements of warped surfaces.

The classes in both Elementary (26) and Advanced (27) Machine Drawing are conducted according to the methods of progressive draftsmen. All details are drawn from sketches made by the students, nothing in the nature of a copy being permitted.

Mechanism (25) theoretical, and as applied to the delineation of gear-teeth, cams, and other mechanical motions, is designed to involve the minimum of drawing needed to obtain a thorough mastery of the principles.

Machine Design (28) is begun by the solution of simple problems involving only the elementary principles of applied mechanics, but requiring careful thought, close observation, and good judgment. A systematic training of the judgment is made of first importance. In Advanced Machine Design (29) the student is required to design the parts of simple mechanism from data and sketches only, while in preparation for a thesis he is made responsible for the entire design and detailed drawings.

DRAWING

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
20	Mechanical Drawing	1	1, 2	2 1	2½ 1	Anthony Ashley	C E M Ch
21	Descriptive Geometry	1	2	3	1	Anthony Ashley	C E M Ch
22	* Freehand Drawing	1	1	1	2	Ashley	C E M Ch
23	Technical Sketching	1	2	1	2	Anthony Ashley	C E M Ch
25	Mechanism	2	1	2 1	2 1	Anthony	C E M Ch
26	Elementary Machine Drawing	2	2	2	2	C. H. Chase	E M Ch
27	Advanced Machine Drawing	3	1	2	3	C. H. Chase	M
28	Elementary Machine Design	3	2	1	3	Anthony	E, M
29	Advanced Machine Design	3	1	2	3	Anthony	M

* Not required of students entering College with this subject.

SHOPWORK

Work in the shops is designed to give practical knowledge of mechanical processes and of materials of construction. Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer.

The work in this department maintains a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shops from drawings prepared in the drafting-room.

The course for the Freshman and Sophomore years is required of all engineers; that of the Junior and Senior years is elective, except for students of mechanical engineering, for whom it is required.

A half-year is given to acquiring experience in the use of the ordinary tools in Carpentry (40) and the use of the tools and lathe in Wood Turning. Following this, moulding or foundry work is taken up in preparation for Pattern Making (42) which constitutes the remainder of the Freshman course. Forging (44) gives an intoduction to the work with iron and steel, and shows the different qualities of the material for bending, drawing, forming, and welding. In the Junior year instruction in metal work is continued, with vise and Machine Tools (45).

Project Work (48), which usually carries a design through from the pattern to the finished product, requires experience in pattern-making and machine work, and gives an opportunity for the extension of the subject in machine-shop instruction upon special lines.

SHOPWORK

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
40	Joinery, Wood Turning, Foundry *	1	1	2	3	Stewart	C E M Ch
42	Pattern Making	1	2	1	3	Stewart	C E M Ch
44	Forging	2	2	1	3	Stewart	C E M
45	Chipping and Filing, Machine Tools †	3	2	2	3	C. H. Chase	M
48	Project	4	2	3	3	C. H. Chase	Elective

* Joinery, 8 weeks; Wood Turning, 4 weeks; Foundry, 4 weeks.

† Civil Engineers may elect No. 45 in the first term.

CHEMISTRY

General Inorganic Chemistry (50) is conducted by means of lectures, recitations, and laboratory work. It comprises theoretical descriptive inorganic chemistry, and includes a brief account of the carbon compounds and the principal technical processes.

Qualitative Analysis (52) is conducted also by means of lectures and laboratory work. Students, under direction, perform experiments and develop schemes for the division of the metals into groups, and for the separation and detection of the metals in each group. Reactions are written, and analytical details are discussed. Six known solutions and thirteen unknown are correctly anlayzed.

Qualitative Analysis (53) is taught by lectures and laboratory work. It includes treatment of substances to effect solution, detection of mineral acids, and includes complete analysis of inorganic solids. The work involves the correct analysis of thirteen solid substances.

Quantitative Analysis (61) is mainly taught by laboratory work. The course includes both gravimetric and volumetric methods. The substances analyzed are minerals and salts.

Organic Chemistry (55) is given by lectures and recitations. It may cover the general principles of descriptive and theoretical organic chemistry.

Metallurgy (57) is studied by lectures and recitations relating to the production, properties, and uses of cast iron, wrought iron, and steel.

Assaying (67), mainly laboratory work, is designed to familiarize the student with the practical methods of sampling and assaying gold, silver, and lead ores.

Gas Analysis (63), including a consideration of technical methods, is conducted by means of laboratory work.

Theoretical Chemistry (69), lectures and recitations, treats somewhat in detail the principal theories of chemical science.

Applied Chemistry (65) is taught by lectures and during excursions to chemical plants. The lectures relate to technical applications of inorganic and organic chemistry.

CHEMISTRY

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Preparation Required	Instructor	Course
50	General Chemistry (Chemistry 1)	2	1, 2	2	3		Durkee / Turner	C E M Ch
52	Qualitative Analysis (Chemistry 2)	3	1	2	3	50	Durkee	C E M Ch
53	Qualitative Analysis (Chemistry 3)	3	2	2	3	52	Durkee	Ch
55	Organic Chemistry (Chemistry 10)	3	1	3	1	50	Garner	Ch
57	Metallurgy (Chemistry 8) . . .	3	2	2	1	50	Durkee	Ch
59	Mineralogy . . .	4	1	2	1, 2	53	Richards	Ch
61	Quantitative Analysis (Chemistry 5)	4	1, 2	2	3	50	Durkee	Ch
63	Gas Analysis (Chemistry 9) . .	4	1	1	2	50	Durkee	Ch
65	Applied Chemistry	4	2	2	1	55	Durkee	Ch
67	Assaying (Chemistry 7)	4	2	2	2	50	Durkee	Ch
69	Theoretical Chemistry (Chemistry 11)	4	2	2	1	50	Eckstein	Ch

PHYSICS AND ELECTRICITY

Instruction in Physics (70) is given by lectures fully illustrated by experiment. The aim is to present the science of physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible.

Work in the Physical Laboratory (72) comprises the more important quantitative determinants in mechanics, sound, light and heat, such as the determination of mass, density, elasticity, force of gravity, velocity of sound, pitch, focal length of lenses, index of refraction, wave length of light, candle-power, specific and latent heat, and coefficient of expansion of solids.

Electricity and Magnetism (74) is supplementary to the course in Physics, and affords the requisite preparation for the technical, and more advanced courses that follow.

In Electrical Laboratory (73) much attention is given to the Wheatstone bridge and the measurement of resistance. Careful study is made of the condenser and the magnetic properties of iron. The candle-power of incandescent lamps, the determination of the constants of recording watt-meters, and the calibration of ammeters and voltmeters receive the attention their importance demands.

The study of Dynamo-Electric Machinery (77), based upon S. P. Thompson's treatise, is very thorough, and is supplemented by the experimental study of machines in the dynamo room.

Great importance is attached to the class making electrical calculations (76), wherein a considerable number of practical problems are presented to the student for solution. These problems embrace a large part of the domain of direct current work, and include the elementary design of dynamos and motors, and winding-tables for drum armatures.

PHYSICS AND ELECTRICITY

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
70	Physics (Lectures)	1	1, 2	3	1	Dolbear	C E M Ch
72	Physical Laboratory	2	2	1 or 2	1 or 3	H. G. Chase / Rollins	C E M Ch
73	Electrical Laboratory	3	1, 2	1	4	Hooper / Chase / Rollins	E M Ch
74	Electricity and Magnetism	3	1	3	1	H. G. Chase	E M Ch
76	Electricity (Problems)	3	2	2	1	Rollins	E
77	Dynamo-Electric Machinery . . .	3	2	3	1	Hooper	E
79	Electrical Laboratory	4	1, 2	2	3	Hooper / Rollins	E

PHYSICS AND ELECTRICITY

The study of Alternating Currents (82 and 83) is carried on during the entire Senior year. The subjects of electro-magnetic induction, simple periodic currents, self and mutual induction transformers, polyphase currents, and induction motors, are successively treated, both descriptively and mathematically. At the same time the study of alternating current machinery is carried on in Electrical Laboratory (79). The rotary converter and the high frequency alternator permit the employment of any periodicity up to over one thousand per second. The employment of such high periodicity greatly facilitates the quantitative study of many alternating current phenomena that are only obscurely exhibited at low frequencies.

Honor students and those electing advanced electrical work read such books as "Alternating Currents," by Bedell and Crehore, "Principles of the Transformer," by Bedell, "Alternating Current Phenomena," by Steinmetz, "Hysteresis in Iron and Other Metals," by Ewing, and have particular investigations assigned them in the laboratory.

In the subject called Electrical Topics (85), each student selects, or has assigned to him, several topics, upon the literature of which he is supposed to inform himself thoroughly, and afterwards to present the fruits of his study in the form of lectures to the class. It is believed that this work will prove of great value in developing the habit of thoughtful reading and in cultivating a just discrimination.

The lectures on the Telegraph and Telephone (87) outline the evolution of these arts and deal comprehensively with the principles involved.

The work in Dynamo Design (88) makes practical application of the principles previously acquired in subject 77. Complete specifications and working drawings of at least one dynamo are prepared by each student. This subject must be taken in connection with advanced machine design.

PHYSICS AND ELECTRICITY

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
82	Alternating Currents	4	1	3	1	Hooper	E
83	Alternating Current Machinery	4	2	3	1	Hooper	E
84	Alternating Currents, Mathematical Treatment	4	1	3	1	Hooper	Elective
85	Electrical Topics	4	2	3	1	Hooper	Elective
86	Magnetism, Theory and Phenomena of .	4	2	3	1	Hooper	Elective
87	Telegraph and Telephone	4	2	1	1	Dolbear	E
88	Dynamo Design	4	1	2	3	Hooper	Elective

ENGINEERING—CIVIL AND MECHANICAL

Surveying (90, 91) includes principally the elements of general surveying; use in the field of levels, transits, and accessory surveying equipment, intelligible notes, measurement of areas and volumes, location of contours, stadia surveying, miscellaneous field problems, computations, and drawing. Two-thirds of the time is spent in actual field surveying.

Precise Surveying (92) comprises the determination of a true meridian by astronomical and solar observations, accurate base-line measurements, a careful system of triangulation, exact computations, plotting, and brief time for Mining Surveying.—Engineering Jurisprudence (92) comprises the judicial functions of surveyors, ownership of surveys, and law of contracts.

Fire Protective Engineering (93) considers modern slow burning construction of buildings, systems of fire protection by automatic sprinklers, hydrants, pumps, and city water supplies, the occupancy, general order and neatness of industrial plants. Two or more visits are made to near-by plants.—Hydrographic Surveying (93) includes the measurement of flow of water and computation of horse-power available, together with a stadia and plane table survey of the river banks.

Railroad Surveying (94) includes the field operations required for the preliminary survey, location of curves, turn-outs, switches, and various structures, together with office-work based upon the data obtained in the field.

Railroad Engineering (95) is pursued in the recitation and drafting rooms, and is taught by text-books and lectures. It includes the study of various curves, switches, and frogs; and takes up such subjects as track work, structures, yards, and methods of making estimates.

Railroads—Economic Location (96) embraces the theory of the location and operation of railroads, and is carried on by recitations, lectures, and review of special examples. Careful study is made of location as influenced by train resistance, traffic, motive-power, cost of construction, and operating expenses, the intention being to give the student comprehensive engineering knowledge of railroad transportation.

ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
90	Surveying	2	1	2	3	Sanborn / Rockwell	C E M Ch
91	Surveying	2	2	2	3	Sanborn / Rockwell	C
92	Precise Surveying and Engineering Jurisprudence	3	1	2	3	Sanborn	C
93	Fire Protective Engineering and Hydrogtaphic Surveying	3	2	2	3	Sanborn	C
94	Railroad Surveying	4	1	2	3	Bray	C
95	Railroad Engineering	4	1	3	1	Bray	C
96	Railroads—Economic Locations . . .	4	2	3	1	Bray	Elective

ENGINEERING—CIVIL AND MECHANICAL

Roofs and Bridges (97) is a study of analytical and graphical methods of obtaining the stresses in the modern forms of simple roof and bridge trusses. The comparative merits and economy of the different kinds of trusses are discussed.

Bridge Design (98) is a course in the design of framed structures of wood and steel and includes actual proportioning of parts, and preparation of detailed drawings.

Highways (99) considers the location and construction of roads and streets; physical properties of earth, stone, and pavements; economy of traction, grades, construction and maintenance.

Sanitary Engineering (109) comprises a brief study of elements that concern the health of a community: sanitary science, water and its purification, water supply, disposal of sewage and garbage. Well-kept notes are required, and include reports of researches in engineering magazines and books, accounts of visits to laboratories, water works, and sewerage plants.

Hydraulics (110), theoretical and applied, includes the laws relating to the pressure and flow of water in pipes, discharge over weirs and through tubes and conduits, and embraces the measurement and development of water power and the construction of water wheels.

Masonry (111) embodies a consideration of materials, the methods of their preparation and use as applied to foundations, arches, bridges, and buildings. It is taught by lectures, textbooks, and inspection of work in process of construction.

Pure Mechanics (112) treats of the principles of force, motion, and work. Care is taken to present problems, about two hundred in number, that will emphasize fundamental principles and be of service in subsequent studies or engineering practice.

Applied Mechanics (113) is a continuation of 112. Particular attention is given to the strength of materials and of structures. Throughout the work numerous practical problems illustrate the principles considered.

Applied Mechanics (114) is an advanced subject open only to students who have passed satisfactorily in the required mechanics (112 and 113).

ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
97	Roofs and Bridges	4	1	3	1	Rockwell	C
98	Bridge Design	4	2	2	3	Rockwell	Elective
99	Highways	4	2	1	1	Bray	C
109	* Sanitary Engineering	3, 4	2	3	1	Sanborn	C
110	Hydraulics	4	2	3	1	Sanborn	C E M Ch
111	* Masonry	3, 4	2	3	1	Bray	C
112	Pure Mechanics	3	1	3	1	Sanborn	C E M Ch
113	Applied Mechanics	3	2	3	1	Bray	C E M Ch
114	Applied Mechanics	4	1	3	1	Bray	Elective

* Subjects 109 and 111 are given in alternate years. 111 will be given in 1903-1904, and 109 in 1904-1905.

ENGINEERING—CIVIL AND MECHANICAL

In Experimental Mechanics (115, 116) problems are set that require for analysis personal experimentation and correct application of the principles of pure and applied mechanics. Action of forces in wood and metals is observed, and illustrative tests are made with laboratory apparatus.

Structural Design (117) is an introduction to the subject of design of structures. Simple problems in foundations, wooden roof framing, and riveted connections are thoroughly discussed in class, after which the students make the necessary computations and drawings.

Structural Design (118) is an advanced course in continuation of 117. It is essentially a course in the engineering details of building design,

In Steam Engine (120) the study of the fundamental principles involved in the generation of steam is followed by their application to engine details, valve gears, and the valve diagram. The theory of the indicator is taught, and applied to the making of simple tests.

Steam Engineering (121) includes the thermo-dynamics of the steam engine and other heat engines, together with the study of various types of valve gears.

Steam Engineering (122) includes problems relating to the design and construction of steam engines, involving the strength and proportion of parts, the consideration of multiple expansion engines, and steam boilers.

Engineering Laboratory (123) includes the adjustment, use, and test of indicators, gauges, and calorimeters; the measurement of power by brakes and dynamometer, and tests of steam and gas engines, and boilers.

Geology (130) is a study, principally in the field, of rocks, minerals, earths, and foundations.

Thesis (135). The thesis prepared by each candidate for a degree in engineering requires at least one hundred and twenty hours of preparation. A single topic that has interested the student is developed by extended personal research, design, or experimentation.

ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
115	Experimental Mechanics	3	1	1	3	Sanborn, Rockwell	C E M Ch
116	Experimental Mechanics	3	2	1	3	Bray, Sanborn	M
117	Structural Design	3	2	2	3	Rockwell	C
118	Structural Design	4	1	2	3	Rockwell	Elective
120	Steam Engine	3	1	3	1	C. H. Chase	C E M Ch
121	Steam Engineering	3	2	3	1	Bray	M
122	Steam Engineering	4	1	3	1	Bray, C. H. Chase	M
123	Engineering Laboratory	4	1, 2	2	3	Bray, C. H. Chase	M
130	Geology	3, 4	2	3	1, 2	Richards	Elective
135	Thesis	4	2	2	4		C E M Ch

ENGLISH

English is required throughout the Freshman and Sophomore years, the aim being to help the student (1) in developing the power of thinking for himself and expressing his thoughts accurately, clearly, and interestingly; (2) in getting some acquaintance with the best English literature, including the literature of science.

English 140 is a general introduction, English 141 a Study of Expression, English 142 a brief historical survey of English literature, and English 143 a study of technical and scientific writing. In English 144 and 145 the work consists in writing theses in conference with the instructor, the subjects of the theses being determined by the needs of the individual student.

Each of the required subjects is presented by lectures and weekly or bi-weekly conferences, and in each subject the work required of the student includes both reading and writing. Written work in other subjects will also be examined by the English department, as a test of the student's ability to express himself clearly and correctly; and theses, as far as possible, will be subject to criticism by the department of English before they are finally accepted by the department for which they are written.

English 144, 145, and the following subjects given in the College of Letters are approved electives for the Junior year.

English 5 (146) is Argumentative Composition, a study of its requirements as observed by successful writers, with constant practice by the student. The written work consists of two themes or their equivalent each week.

English 13 (148), The English Romantic Movement in Poetry. Lectures, reading, brief critical essays.

English 14 (149), Poets of the Victorian Era. Lectures, reading, individual treatment of authors not studied in the class.

English 15 (150), Prose of the Nineteenth Century. Lectures, reading, brief critical essays.

ENGLISH

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
140	English	1	1	2	1	Earle	C E M Ch
141	English	1	2	3	1	Whittemore	C E M Ch
142	English	2	1	3	1	Earle	C E M Ch
143	English	2	2	1	1	Earle	C E M Ch
144	English		1			Earle	Elective
145	English		2			Earle	Elective
146	English 5		1	1	1	Shipman	Elective
148	English 13		1	3	1	Maulsby	Elective
149	English 14		2	3	1	Maulsby	Elective
150	English 15		1, 2	3	1	Whittemore	Elective

MODERN LANGUAGES

For admission to the Engineering Department, an elementary knowledge of French or German (see pages 44, 45,) is required. Students failing to receive credit for this may enter French 160. Those who have fulfilled the conditions stated on page 48, 49, will be given advanced credit, but advanced credit for a language not continued in College, or credit for more than three years' work, will be given only on examination.

The work required of candidates for the degree of S.B. in Engineering is as follows:

1. Those having fulfilled the regular entrance requirements will continue the language offered, during the Freshman and Sophomore years.
2. Those having received credit for both languages may pursue either language for two years or each for one year.
3. Those having received advanced credit in one will study the alternative language for two years.
4. Those having received advanced credit in both will be required to take only one year of language in College.

Those in class 2 who receive grade B in each language, and those in 3 or 4 who take an advanced subject in French or German and receive grade B may count one subject (six term-hours) also as an elective.

POLITICAL ECONOMY

Political Economy 180, designed especially for students of engineering, aims at a systematic and comprehensive study of the elements of economics, and comprises a study of some of the more important problems of modern industrial society.

PHYSICAL TRAINING

The aim of the department is to secure a more symmetrical development of the body, and a fuller appreciation of the value of systematic exercise. Special work is prescribed for each student, depending on his physical condition, and work is also conducted in classes.

MODERN LANGUAGES

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
160	French, Elementary		1, 2	5	1	Earle	
161	French, Intermediate	1	1, 2	3	1	Hayden	C E M Ch
162	French, Advanced	2	1, 2	3	1	Hayden	C E M Ch
165	German, Elementary		1, 2	3	1	Colwell	
166	German, Intermediate	1	1, 2	3	1	Colwell	C E M Ch
167	German, Advanced	2	1, 2	3	1	Fay	C E M Ch

OTHER SUBJECTS

180	Political Economy	4	1	3	1	Metcalf	C E M Ch
185	Physical Training	1, 2	1, 2†	3	1	Stroud	C E M Ch

† From the middle of November to the middle of March.

TABULAR PROGRAM, FIRST HALF-YEAR

The prefixed *a*, *b*, *c*, signify divisions

MONDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR	PlEc 180	ApMch 114	StEn 122	RfBr 97	M Dn 29
JUNIOR	Cal 8	Chm 55	StEn 120	ElMg 74	*a* PSv 92 *b* ElLb 73 *2 to 6*
SOPH	Eng 142	*a* Sv 90	*a* Sv 90	*a* Sv 90	*b* Sv 90
FRESH	Ger 166 *b* Frn 161 *a* Alg 1 AlgB-P	Ger 165 *a* Frn 161 *b* Alg 1 Frn 160	Phs 70	Dwg 20	*a* Dwg 20 *2 to 4.30* *b* Sh 40

WEDNESDAY

SENIOR	PlEc 180	ApMch 114	StEn 122	RfBr 97	MDn 29 StDn 118
JUNIOR	Cal 8	Chm 55	StEn 120	ElMg 74	MDwg 27
SOPH	Eng 142	*a* Sv 90	*a* Sv 90	*a* Sv 90	Chm 50
FRESH	Ger 166 *b* Frn 161 *a* Alg 1 AlgB-P	Ger 165 *a* Frn 161 *b* Alg 1 Frn 160	Phs 70		*a* Dwg 20 *2 to 4:30* *b* Sh 40

FRIDAY

SENIOR	PlEc 180	ApMch 114	StEn 122	RfBr 97	StDn 118
JUNIOR	MDwg 27	MDwg 27 Chm 55	StEn 120	ElMg 74	*a* PSv 92 *a* ElLb 73 *2 to 6*
SOPH	Eng 142	*c* Sv 90	*c* Sv 90	*c* Sv 90	Chm 50
FRESH	Ger 166 *b* Frn 161 *a* Alg 1 Alg B-P	Ger 165 *a* Frn 161 *b* Alg 1 Frn 160	Phs 70		*c* Dwg 20 *2 to 4.30* FDwg 22 *2 to 4*

TABULAR PROGRAM, FIRST HALF-YEAR

The prefixed *a*, *b*, *c*, signify divisions

TUESDAY

	8:45	9:45	10:45	11:45	2 to 5
Senior	El 82 REn 95	ElLb 79	ElLb 79	ElLb 79	DyDn 88 EnLb 123
Junior	Mch 112	*b*PSv 92 *a*MSh 45	*b*PSv 92 *a*MSh 45	*b*PSv 92 *a*MSh 45	Chm 52
Soph	Ger 167 *a*Frn 162 *b*Cal 7	*b*Frn 162 *a*Cal 7	*a*Mchm 25 *b*Mchm 25	*a*Mchm 25 *b*Mchm 25	*c*Sv 90
Fresh	Eng 140	*c*Sh 40 Gm B-P	*c*Sh 40 *a*Tr 3	*c*Sh 40 *b*Tr 3 Frn 160	*b*Dwg 20 *2 to 4:30* *a*Sh 40

THURSDAY

Senior	El 82 REn 95	ElLb 79 RSv 94	ElLb 79 RSv 94	ElLb 79 RSv 94	DyDn 88 RSv 94
Junior	Mch 112	*b*ExMch 115 *a*MSh 45	*b*ExMch 115 *a*MSh 45	*b*ExMch 115 *a*MSh 45	Chm 52
Soph	Ger 167 *a* Fr 162 *b*Cal 7	*b*Frl 162 *a*Ca 7	*a*Mchm 25 *b*Mchm 25	*a*Mchm 25 *b*Mchm 25	*b*Sv 90
Fresh	E g B-P	*c*Sh 40 Gm B-P	*c*Sh 40 *a*Tr 3	*c*Sh 40 *b*Tr 3	*b*Dwg 20 *2 to 4.30* *a*Sh 40

SATURDAY

Senior	El 82 R E 95	E Lb 123	ELb 123	ELb 123	
Junior	Mch 112	*b*PSv 92 *a*ExMch 115	*b*PSv 92 *a*ExMch 115	*b*PSv 92 *a*ExMch 115	
Soph	Ger 167 *a*Frn 1 *b*Cal 7	*b*Fr 162 *a*Cal 7	Mchm 25 Mchm 25	*a*Mchm 25 *b*Mchm 25	
Fresh	Eng 140	GmB-P	*a*Alg 1 Frn 169	*b*Alg 1	

TABULAR PROGRAM, SECOND HALF-YEAR

The prefixed *a*, *b*, *c*, signify divisions

MONDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR		Msy 111	El 83	ElTp 85 REn 96	
JUNIOR	DEM 77	Msy 111	StEn 121	DfEq 9	*b*ElLb 73 *2 to 6* *a*MSh 45
SOPH	Eng 143	*a*Sv 91 *b*FSh 44	*a*Sv 91 *b*FSh 44	*a*Sv 91 *b*FSh 44	*b*Sv 91 *a*FSh 44
FRESH	Ger 166 *b*Frn 161 *a*Anlt 5 AlgB-P	Ger 165 *a*Frn 161 *b*Anlt 5 Frn 160	Phs 70	Dwg 20	*a*Dwg 20 *2 to 4.30*

WEDNESDAY

SENIOR		Msy 111	El 83	ElTp 85 REn 96	
JUNIOR	DEM 77	Msy 111	StEn 121 Chm 57	ElPb 76	MDn 28 StDn 117
SOPH	PhsLb 72	*a*Sv 91 *c*FSh 44	*a*Sv 91 *c*FSh 44	*a*Sv 91 *c*FSh 44	Chm 50
FRESH	Ger 166 *b*Frn 161 *a*Anlt 5 Alg B-P	Ger 165 *a*Frn 161 *b*Anlt 5 Frn 160	Phs 70		*a*Dwg 20 *2 to 4.30* *b*PSh 42

FRIDAY

SENIOR	Hghs 99	Msy 111	El 83	ElTp 85 REn 96	
JUNIOR	DEM 77	Msy 111	StEn 121 Chm 57	DfEq 9	*a*ElLb 73 *2 to 6* *b*MSh 46 StDn 117
SOPH	Eng 143	*b*Sv 91	*b*Sv 71	*b*Sv 91	Chm 50
FRESH	Ger 166 *b*Frn 161 *a*Anlt 5 Alg B-P	Ger 165 *a*Frn 161 *b*Anlt 5 Frn 160	Phs 70		TcSk 23 *2 to 4*

TABULAR PROGRAM, SECOND HALF-YEAR

The prefixed *a*, *b*, *c*, signify divisions

TUESDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR	Hyd 110	ElLb 79	ElLb 79	ElLb 79	BrDn 98 EnLb 123
JUNIOR	ApMch 133	*a*ExMch 116 *b*MSh 45	*a*ExMch 116 *b*MSh 45	*a*ExMch 116 *b*MSh 45	HSv 93 Chm 53
SOPH	Ger 167 *a*Frn 162 *b*Cal 7	*b*Frn 162 *a*Cal 7			PhsLb 72
FRESH	Eng 141	GmB-P	*a*DsGm 21 *b*DsGm 21	*a*DsGm 21 *b*DsGm 21	*b*Dwg 20 *2 to 4.30* *a*PSh 42

THURSDAY

SENIOR	Hyd 110	ElLb 79	ElLb 79	ElLb 79	BrDn 98 EnLb 123
JUNIOR	ApMch 113	*b*ExMch 116	*b*ExMch 116	*b*ExMch 116	HSv 93 *a*MSh 45 Chm 53
SOPH	Ger 167 *a*Frn 162 *b*Cal 7	*b*Frn 162 *a*Cal 7	MDwg 26	MDwg 26	PhsLb 72
FRESH	Eng 141	GmB-P	*a*DsGm 21 *b*DsGm 21	*a*DsGm 21 *b*DsGm 21	*b*Dwg 20 *2 to 4.30* *c*PSh 42

SATURDAY

SENIOR	Hyd 110	Ths 135	Ths 135	Ths 135	
JUNIOR	ApMch 113			ElPb 76	
SOPH	Ger 167 *a*Frn 162 *b*Cal 7	*b*Frn 162 *a*Cal 7	MDwg 26	MDwg 26	
FRESH	Eng 141	Frn 160	*a*DsGm 21 *b*DsGm 21	*a*DsGm 21 *b*Ds Gm 21	

THE GRADUATE DEPARTMENT

Faculty of the Graduate Department

ELMER H. CAPEN, A.M., D.D., LL.D., PRESIDENT

J. STERLING KINGSLEY, SC.D., DEAN
Professor of Biology

HARRY G. CHASE, B.S., SECRETARY

BENJAMIN G. BROWN, A.M.*
Walker Professor of Mathematics

CHARLES E. FAY, LITT.D.
Wade Professor of Modern Languages

ARTHUR MICHAEL, A.M., PH.D.
Professor of Chemistry

WILLIAM L. HOOPER, A.M., PH.D.
Professor of Electrical Engineering

ARTHUR E. AUSTIN, A.B., M.D.
Professor of Medical Chemistry

DAVID L. MAULSBY, A.M.
Professor of English Literature

GEORGE VAN NESS DEARBORN, A.M., PH.D., M.D.
Assistant Professor of Physiology

WILLIAM K. DENISON, A.M.
Professor of the Latin Language and Literature

LAWRENCE B. EVANS, PH.D.
Professor of History

HENRY C. METCALF, PH.D.
Jackson Professor of Political Science

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

FRANK G. WREN
Professor of Mathematics

* Deceased.

STANDING COMMITTEES OF THE GRADUATE DEPARTMENT

EXECUTIVE: Professor Kingsley, *Chairman*; Professors Hooper and Denison.

REQUIREMENTS FOR DEGREES: Professor Kingsley, *Chairman*; Professors Evans and Michael.

The Graduate Department

INSTRUCTION

Graduate instruction is given by members of the General Faculty. The advanced elective work offered to undergraduates in any department of the College of Letters is open to graduate students, and will count for the degree of Master of Arts, on condition that it be not counted for any other degree. Additional courses still more advanced may be arranged with the instructor in whose department the work is to be done.

DEGREES

The degrees offered are Master of Arts, Master of Science, and Doctor of Philosophy. Departments at present open to candidates for the degree of Master of Arts are:—

English,	Mathematics,
Modern Languages,	Chemistry,
Ancient Languages,	Physiological Chemistry,
History and Public Law,	Biology,
Political Science,	Physiology,
	Electricity.

The degree of Doctor of Philosophy is offered in Chemistry, in Biology, and in History and Public Law.

The degree of Master of Science is offered in Biology, in Chemistry, and in Engineering.

The Degree of Master of Arts will be conferred upon graduates of Tufts College who have received the degree of Bachelor of Arts, or upon graduates of other colleges whose course of study has been equivalent to that required at Tufts College for the degree of Bachelor of Arts, upon the following conditions:—

1. They shall have completed an approved course of advanced study, including the equivalent of at least thirty term hours, in one or at the most two departments.

2. This course shall be pursued during a residence of not less than one year. The condition of residence may be waived by special permission, but in this case the degree cannot be taken with less than two years of graduate study.

3. The candidate shall prepare a thesis and pass a satisfactory examination before a board of three examiners, appointed by the Graduate Faculty at its May meeting. The thesis must be presented at least one month before Commencement.

4. No subject counted for the first degree will be counted for the second degree.

5. Students taking the degree at the end of a four years' course of study must have complied with the requirement as to standing governing those who receive the degree of A.B. at the end of three years; that is, an average standing of Grade B, or higher, must have been attained on the entire work of the course.

6. Candidates for this degree must make a written application to the Graduate Faculty before October 1 of the college year in which the degree is to be conferred, and if the degree is not taken after one year of study they must also give a second notice three months before receiving the degree.

Graduates of Tufts College who have taken the degree of Bachelor of Philosophy, or graduates of other colleges holding a degree of similiar grade, must complete the requirement for the degree of Bachelor of Arts before they can be entered as students in courses leading to the degree of Master of Arts.

THE DEGREE OF MASTER OF SCIENCE will be conferred upon Bachelors of Science who shall satisfactorily pursue advanced professional study at Tufts College for one year, under the conditions required of candidates for the degree of Master of Arts; or who shall present suitable evidence of three years of professional work, one year of which must be in a position of responsibility, in which case a certain amount of professional study will be assumed. A thesis based upon this study will be required.

THE DEGREE OF DOCTOR OF PHILOSOPHY will be conferred upon Bachelors of Arts, Philosophy, or Science who shall have completed at least three years of graduate study, two years of which must be in residence, subject to certain conditions, which are enumerated below (pages 160, 161) in connection with the

several departments. This degree will not be conferred simply on the ground of the completion of the required course of study. High attainment is necessary, and especially the power of original thought and independent investigation.

The whole course of study must be devoted to one subject, and a thesis must be presented giving evidence of original research. Other special requirements may be made by the instructors in charge of the work of the candidates. Each candidate must pass a satisfactory examination before a board of three examiners appointed by the Graduate Faculty.

The thesis must be ready at least one month before Commencement, at which time the student must make written application to the Secretary to be considered as an applicant for the degree.

THE DEGREE OF MASTER OF ARTS may be taken by candidates for the degree of Doctor of Philosophy at the end of their first year of study, or it will be conferred together with the latter degree.

DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF MASTER OF ARTS

ENGLISH.—It is assumed that candidates for the degree of Master of Arts in English will have already laid a good foundation in English composition and the history of English literature. The amount of work expected is roughly indicated by that required of a major student in English at this College. When not anticipated in undergraduate work, the subjects numbered 7*, 10, 17, 18, 19, 20, 23, 24, 25, and 26, may be counted towards the Master's degree, provided that the work done distinctly surpasses in quality that required of undergraduates. On the other hand, a part of the work or the entire work for the advanced degree may consist of a special course of study, undertaken under the direction of the department. Such special work must be of creative or investigative order. It may take the form of discussion of some question in literary history or

* See "Departments of Instruction," pages 60 to 62.

literary criticism. It may consist of the intensive study of an author or a period. Frequently the use of German and French is necessary.

MODERN LANGUAGES.—The extended undergraduate courses offered in Modern Languages enable the candidate for the degree of Bachelor of Arts who specializes in this department to cover the work formerly required for the Master's degree. For those who have not taken the more advanced subjects, the department offers a full graduate course leading to the degree of Master of Arts. The work is performed in existing undergraduate classes. To enter upon this course, the candidate must have completed the equivalent of six of the Modern Language subjects, including 1 and 3 in both German and French. Of elementary subjects only Italian may be taken, by such as have had the equivalent of two years of French. Graduate students whose special work is being performed in other departments are admitted to such classes in German and French, beyond subject 1, as their proficiency will warrant.

ANCIENT LANGUAGES. — Candidates for the degree of Master of Arts in Greek or Latin must have completed, for Greek, courses 1, 2, 3, 4 or 5; for Latin, courses 1, 2, 3, or 4, and 5, or equivalents.* It is desirable that candidates for this degree in either of the ancient languages present the other as a minor subject. Exceptional cases will be treated in accordance with the varying circumstances. Greek 4, 5, 7, 8, and 9, Latin 3, 4, 6, 7, 8, 9, and 10, and Classical Archæology 1, 2, 3, 4, 5, and 6, so far as these have not been anticipated as undergraduate work, may be counted towards the Master's degree. Graduate students will be expected to do work of an advanced character, either in classes with undergraduates or on special lines of investigation assigned by the instructors. The required thesis, on an approved topic, must embody the results of the investigation of some author or period or of some philological or archaeological subject. A reading knowledge of French and German is indispensable.

* See "Departments of Instruction," pages 67 to 70.

HISTORY AND PUBLIC LAW.—Before beginning graduate work in History and Public Law every student must have completed History 1 and 2, or their equivalent.* The advanced subjects enumerated in the catalogue, in so far as they are suited to the needs of the candidate, may be offered for the higher degrees, but it is expected that much of the candidate's work will consist of special work pursued under the direction of the department.

For the degree of Master of Arts, a working knowledge of French is essential. A similar knowledge of German is desirable, and in some cases may be necessary. In addition to the subjects required for the degree candidates will be expected to do something in the way of an independent investigation of a definite subject, the result to be embodied in a thesis.

POLITICAL SCIENCE.—The degree of Master of Arts in Political Science is conferred on graduates of Tufts College who pursue successfully one year of resident graduate study. Bachelors of Arts of other colleges must satisfy the department that they are qualified by previous training to enter upon the desired course of study, and show the results of a year's resident graduate work with high credit. A good reading knowledge of French and German is desirable, and may in certain lines of work be necessary. Before receiving the degree all candidates are expected to sustain a final oral examination, and give evidence by a thesis of their ability to do work of the investigative order. In addition to the regular advanced work offered by the department, special subjects giving opportunity for original investigation will be outlined for candidates wishing to pursue them.

MATHEMATICS.—Graduate students in Mathematics must have acquired a working knowledge of the Calculus, and may offer as part of their work for the Master's degree any of the subjects given by the department except the first six, but subjects 7, 9, and 10, or their equivalents, must be included.† Candi-

* See "Departments of Instruction," pages 75, 76.

† See "Departments of Instruction," page 81.

dates will hold themselves in readiness to be examined at the end of their studies upon any topics treated in subjects 3 to 6 inclusive, as well as upon work offered for the degree.

CHEMISTRY.—The requirements for beginning graduate work in Chemistry are the completion of two years' work in General Chemistry, Basic and Acid Qualitative Analysis, and the outlines of Organic Chemistry (Subjects 1, 2, 3, and 10 of Tufts College, or their equivalent).*

To obtain the degree of Master of Arts the applicant must have done satisfactory work in at least five of the subjects, numbered 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, and 15, and must also present a satisfactory thesis and pass a satisfactory examination in all the subjects studied.

PHYSIOLOGICAL CHEMISTRY. — The work in Physiological Chemistry requires in preparation a thorough foundation in inorganic and organic chemistry, including qualitative and quantitative analysis; the ability to read scientific French and German readily; and a thorough knowledge of the elements of physics, particularly with reference to the laws of the density of gases and fluids under heat and pressure, as well as such acquaintance with optics as will enable one to use the polariscope, spectroscope, and microscope intelligently.

The course is one of laboratory work wholly, under the personal advice and assistance of the instructor, and must include one original investigation, to require not less than one half-year, and to be accompanied by a satisfactory thesis upon the results of such research, The subject of this investigation may be taken from the realm of enzymes, metabolism, or hygiene. A rigid examination will also be demanded upon the principles of physiological chemistry.

PHYSIOLOGY.—Before beginning graduate work in Physiology the candidate for the degree of Master of Arts must have had at least a year's training in biology, and, besides, a knowledge of the outlines of anatomy and physiology such as may be obtained from such works as Martin's Human Body, with

* See "Departments of Instruction," pages 85, 86.

simple laboratory experiments. A reading knowledge of French and German is desirable, and in some cases may be necessary. The work of the year is largely practical. It involves the completion of the work in physiology required of candidates for the degree of Doctor of Medicine, and, in addition, the investigation of some simple problem which shall serve as the basis of the required thesis.

BIOLOGY.—Before beginning graduate work in Biology the student must have a good knowledge of the elements of vertebrate and invertebrate anatomy and of physiology (courses 1 to 4 of Tufts College, or their equivalent), and must be able to use French and German.* The work offered for advanced degrees is in the lines of comparative anatomy, and of the histology and embryology of animals. Consequently the greatest stress will be laid upon laboratory work, but students may also take the subjects numbered 5, 6, 8, and 9.

For the degree of Master of Arts or Master of Science the student must pass a satisfactory examination in the principles of morphology, and present an acceptable thesis embodying the result of research.

ELECTRICITY.—As a preparation for graduate work in electricity the candidate must have a thorough mathematical foundation, including differential equations, and a good knowledge of physics, including elementary electrical tests (Physics 1 to 5 of Tufts College, or an equivalent). Unless these requirements be met upon beginning graduate work, it will scarcely be possible to obtain the master's degree in one year.

The graduate work will include the satisfactory completion of subjects 1, 2, 3, 4, 5, and 8,† and the preparation of an acceptable thesis involving original research.

* See "Departments of Instruction," page 87.

† See "Departments of Instruction," pages 82, 83,

DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

CHEMISTRY.—To obtain the degree of Doctor of Philosophy the candidate must have at the beginning a good working knowledge of German. He must (unless previously qualified) take subjects 4 to 7, 9 to 15, and 17, and devote at least a year to subject 16.* Examinations in the above subjects must be satisfactorily passed, and an acceptable thesis, embodying an original investigation in Chemistry, must be presented.

BIOLOGY.—Candidates must have a good working knowledge of French and German before beginning their work; they must carry on research in animal morphology for at least three years, two of which must be in residence. They must also have passed one summer at some sea-shore biological station. They must pass an examination on general zoology, embracing not only the fundamental facts of morphology and classification, but the more prominent philosophical views as well. Each candidate must present an acceptable thesis embodying original research, with an adequate discussion of the bearings of the facts discovered, and the views of previous writers on the same subject.

HISTORY AND PUBLIC LAW.—Every candidate for the degree of Doctor of Philosophy in History and Public Law will be expected to possess a working knowledge of French and German. Before beginning his graduate work, he should have completed History 1, 2, and 3, and Public Law 1.† For the attainment of the degree he is expected to show

(1) A general knowledge of the whole field of mediaeval and modern history. This knowledge is expected to involve a comprehension of the significance of events and institutions rather than a familiarity with details,

(2) An intimate acquaintance with the history of a limited period. Here the candidate is expected to have a detailed knowledge of the events and institutions of the period selected, together with a critical knowledge of the literature bearing upon it.

(3) A critical knowledge of the leading writers upon mediaeval and modern history.

* See "Departments of Instruction," pages 85, 86.

† See "Departments of Instruction," pages 75 to 77.

(4) Power of research, as evidenced by the preparation of a thesis. The thesis must be exhaustive, must constitute a contribution to the field of human knowledge, and must be in a form suitable for publication. The preparation of the thesis will require the greater part of the candidate's time for one year.

Due credit will be allowed for graduate work done in other institutions.

FELLOWSHIPS

THE OLMSTEAD AND MINER FELLOWSHIPS IN NATURAL HISTORY.—In accordance with the spirit of the gift of the late Charles Hyde Olmstead, of Hartford, Conn., the Trustees have established two fellowships in Natural History, to be known respectively as the Olmstead and the Miner Fellowship. The income of these fellowships, amounting to two hundred and fifty dollars annually each, is awarded by the Trustees to graduate students in Natural History, upon recommendation of the Administrative Board. The conditions of the fellowships are as follows:—

(1) The application must be made in writing before May 1, addressed to the President of the College. It must contain evidence of a liberal education, and of ability to profit by the work to be done, as well as testimonials of good character from instructors or others. Any original article, either written or printed, is an aid in ascertaining the attainments of the candidate.

(2) The holder of the fellowship will be expected to devote himself to the prosecution of some special subject, under the direction of the professor in charge of the department of Natural History. He may be called upon for minor services, such as conducting examinations, but he shall not be called upon to teach. He may, however, at his own option, and with the approval of the President, give instruction by lectures or otherwise to persons connected with the College, but not elsewhere.

(3) The payments will be made half in January and half in June; but, in case of resignation or removal from the fellowship, payment will be made only for the time it is actually held. The holder of the fellowship is not exempt from the payment of tuition.

(4) Residence is a condition of holding either of these fellowships.

The holder of a fellowship may be eligible to a single re-election, but incumbency constitutes no claim to re-appointment.

SCHOLARSHIPS

The Trustees of Tufts College have established eleven scholarships, one in each department offering graduate work, each scholarship, giving free tuition to the incumbent, who is expected to devote himself exclusively to advanced study. Details concerning these scholarships may be obtained from the Secretary, to whom also all applications should be addressed.

TUITION

The tuition fee for the whole course for the degree of Master of Arts, or Master of Science is *one hundred dollars*, of which *fifty dollars* is payable in advance.

The tuition fee for candidates for the degree of Doctor of Philosophy is *one hundred dollars* for each year spent at the College, of which *fifty dollars* is payable in advance each year.

The requirement of bonds stated in this catalogue, under "Expenses," applies to all students of the College, graduate as well as undergraduate.

METCALF HALL

Buildings and Equipment

The College buildings are seventeen in number. Ballou Hall contains recitation-rooms, the room of the President and Faculty, and the offices of the Dean, the Registrar, and the Bursar. It contains also the college bookstore. Other buildings are Barnum Museum; Goddard Chapel; Goddard Gymnasium; the Library; the Chemical Building; three dormitories,—East Hall, West Hall, Dean Hall, for men; the Commons Building, containing the Commons dining-hall, the post-office, and rooms for students; Metcalf Hall and the Start House, for women students. The Bromfield-Pearson School building is available for technical courses of the College. Two buildings, Miner Hall and Paige Hall, are devoted to the use of the Divinity School. A new building, Robinson Hall, provides for work in certain of the physical sciences. A power-house has been added, supplying light, heat, and power to the engineering buildings.

LIBRARY

The library contains about forty-eight thousand bound volumes and thirty-three thousand two hundred pamphlets. The College regularly receives more than two hundred periodicals. By favor of Senator Hoar the library is a depository for government publications. In the library building a reading-room, maintained by the students, supplies the daily and weekly papers. Separate rooms have been provided with facilities for the use of students working in the departments of History, the Ancient Languages, Music, English, and Political Science. The average annual increase by donation and purchase, for the last five years, has been about twenty-three hundred and fifty volumes. The library is open to all members of the College every day in the week, except Sunday, from 8.15 A.M. to 12.45 P.M., and from 2 to 5 P.M.

In addition to the general library, there is in Miner Hall the

collection of the Universalist Historical Society (fifty-four hundred volumes and several thousand pamphlets), to which, on application, students have free access; in the Barnum Museum is the department library of Natural History, numbering about seventeen hundred volumes and more than forty-eight hundred pamphlets; and, besides the full collection of English works relating to music in the library proper, there is, in connection with the music-rooms in Goddard Gymnasium, the Metcalf musical library of sixteen hundred volumes. There are altogether about fifty-six thousand bound volumes available for use.

BARNUM MUSEUM

The Barnum Museum of Natural History was built in 1883-84 by the late Phineas T. Barnum, who gave the College a fund for its maintenance, and for the addition of two wings to the central building. One of these wings has been erected. In addition to laboratory rooms, it affords space for the display of the mineralogical and geological collections.

The College is also indebted to Mr. Barnum for the larger portion of its zoological collection. This serves to illustrate all groups of the animal kingdom, and is especially rich in skeletons and mounted skins of mammals, the whole being well adapted for the purposes of instruction. The botanical collection consists of an herbarium containing a representation of the flora of New England, besides many specimens from Europe and the southern and western states. The geological collection contains representatives of the various types of rocks, as well as of fossils from all formations. The mineralogical collection embraces fine examples of most of the species.

The laboratories and lecture-rooms of the department of Geology are in the main Museum building. The geological laboratory is provided with petrological microscopes, instruments for making rock sections, and other instruments. The mineralogical laboratory possesses the apparatus necessary for the determination of minerals, the analysis of ores, and assay work. The biological laboratories are in the newly-erected wing. The laboratory for elementary work is furnished with all necessary facili-

ties, while the laboratories (two in number) for advanced and research work have all the appliances needed for investigation on the lines of anatomy, histology, and embryology.

GODDARD GYMNASIUM

Goddard Gymnasium, the gift of Mrs. Mary T. Goddard, is well fitted for class and individual work. It is provided with dressing-rooms, tub-baths, shower-baths, and lockers. The apparatus embraces that usually found in a well-equipped gymnasium, including fourteen Sargent developing machines, a large wrestling mat, and facilities for basket ball. The gallery contains a running-track, one thirty-second of a mile in length. There is also a well lighted ball-cage. A full set of anthropometric instruments admits the accurate measurement of each student as preliminary to the assignment of suitable exercise.

CHEMICAL BUILDING

The building of the department of Chemistry contains laboratories for general inorganic, organic, analytical, and metallurgical chemistry, a large lecture-room, library, and weighing-room, and the private laboratories of the professors in charge. The rooms are provided with all the modern laboratory conveniences, and are well supplied with apparatus and chemicals.

ROBINSON HALL

Robinson Hall is a memorial to the late Charles Robinson, and is designed for the use of the department of Engineering. It contains the physical and electrical laboratories, and drafting rooms for the department of Civil Engineering. In addition to recitation rooms, and offices of the instructors, there is a large lecture hall and a library.

PHYSICAL LABORATORIES. The laboratory of General Physics has a floor area of about 2500 square feet, and is provided with the necessary apparatus for quantitative work in mechanics, sound, light, and heat. Adjacent to it are rooms for photography, blue-printing, and experiments involving the use of chemicals and water.

Among the more important pieces of apparatus may be mentioned several balances of German and American make; a dividing engine, chronograph, and spectrometer from the Société Génevoise; an Elliott Brothers optical bench, and a large microscope with accessories. A great deal of serviceable apparatus is in use that has been made in the college workshops.

A photometer room thirty-nine feet long is used for the photometry of gas, incandescent and arc lamps, and such experiments in optics as require a long dark room. A large apparatus room is connected with the lecture hall and laboratories.

ELECTRICAL LABORATORIES. The testing laboratories are well equipped for general electric testing. The apparatus includes various makes of ammeters, voltmeters, wattmeters, galvanometers, electrometers, electro-dynamometers, resistance boxes, bridges, condensers, and standards of resistance, capacity, and electro-motive force.

The testing rooms are provided with direct current supply at any voltage from 2 to 120 volts from the battery room, and with alternating current at 100 volts from the transformer.

The transformer room is situated in the basement, and is equipped with transformers of various makes, including a battery of six, with oil insulation, and arranged to give any pressure from 1,000 to 30,000 volts. There is also a pair of Thomson Compensators, a Thomson 10-kilowatt electric welder, a 4-kilowatt rotary converter, and a special motor-driven high-frequency alternator, with which any periodicity up to 1,000 per second can be obtained. The armature of this alternator, which is of the Mordey type, is arranged with twelve independent circuits, which can be connected in any manner, so that a wide range of voltage and current can be readily obtained.

The building is lighted throughout by gas and electricity, and heated from an adjoining steam plant by direct and indirect methods.

BROMFIELD-PEARSON BUILDING

The Bromfield-Pearson Building comprises the drafting and recitation-rooms, offices, and shops for conducting the special courses of the school. It is used also for the department of drawing and for the shop-work in the College. The drafting-rooms are three in number, separated from the noise and vibration of the shops. Abundant and uniform light is provided, rooms on the upper floor having large sky-lights on the northerly side. There are forge, moulding, pattern, and machine shops. These are equipped with modern tools in the most approved manner. Each student is provided with a separate bench, forge, lathe, and tools. A twenty-five-horse-power Buckeye engine furnishes the motive power for the shops, and also serves for experimental work in the study of the steam engine. A one-hundred-and-fifty-light dynamo, designed and built at the College, provides the drafting-rooms and shops with electric light.

THE POWER STATION

The Power Station is equipped with a one-hundred-and-twenty-five horse-power boiler, which supplies heat and power to the engineering buildings. It is also piped and equipped for experimental work in steam engineering.

The engine-room contains a twenty-five horse-power Sturtevant engine directly coupled to a Mordey Alternator, a forty horse-power Harrisburg Standard engine directly coupled to a direct-current General Electric generator, and a ten horse-power Columbia gas engine belted to a direct current generator. A storage battery of sixty elements furnishes current for lighting, power, and experimental purposes.

THE DORMITORIES

The halls for the accommodation of students in the College of Letters are six in number. East, West, and Dean Halls, and the Commons Building, for men, are arranged with convenient rooms in suites, are warmed by steam, lighted by gas, and have good modern plumbing. These halls provide rooms

for two hundred and fifty men. Metcalf Hall, with accommodations for twenty-four women students, is a gift to the College by Mr. Albert Metcalf, of Newton. The first floor contains the rooms of the matron, a reception-room, cloak-room, reading-room, and dining-room. The second and third floors have pleasant rooms for students, with ample bath and toilet conveniences on each floor. In the wing is the kitchen on the first floor, the servants' room on the second. Every safeguard of health is provided. The Start House furnishes another home for women, with a matron, and rooms for thirteen students.

General Information

RELIGIOUS OBSERVANCES

Goddard Chapel, erected in 1882-83, is the gift of Mrs. Mary T. Goddard, as a memorial of her husband, the late Thomas A. Goddard. Morning prayers are held daily, at which attendance is required. The care of the pulpit on Sunday devolves upon the President of the College; but variety and interest are given to the preaching service by frequent exchange with neighboring clergymen. A trained choir, composed of men and women students, sings on Sunday. Attendance upon Sunday service is required; but permission is freely given to those who desire to attend elsewhere.

The RUSSELL LECTURE, established in accordance with a bequest of the late James Russell of Arlington, is delivered before the Trustees, Faculty, and students, on the first Sunday of the college year, by either a clergyman or a layman, on a subject prescribed by the testator.

TUFTS COLLEGE STUDIES

A publication called "Tufts College Studies" has been established, as a means of presenting to the world the results of original work, done in the different departments of the College. The numbers, which are issued as material is ready, are distributed to educational institutions and learned societies. The College desires to establish regular exchanges of these Studies with all publishing institutions at home and abroad. Correspondence regarding exchanges should be addressed to the Librarian of Tufts College. Eight numbers have been issued, containing the following papers: "The Anterior Cranial Nerves of Pipa," by G. A. Arnold; "Ectodermic Origin of the Cartilages of the Head," by Julia B. Platt; "The Classification of the Arthropoda," by J. S. Kingsley; "Develop-

ment of the Lungs of Spiders," by O. L. Simmons; "Development of the Wing in Sterna Wilsoni," by V. L. Leighton; "The Morphology and Classification of the Pauropoda, with notes on the Morphology of the Diplopoda," by Frederick C. Kenyon; "The Chondrocranium in the Ichthyopsida," by Guy M. Winslow; "The Growth of 'Sartor Resartus,'" by D. L. Maulsby; "The Ossicula Auditus," by J. S. Kingsley; "The Development of the Eye Muscles in Acanthias," by Arthur B. Lamb; "The Cranial Nerves of Amphiuma," by J. S. Kingsley; and "The Systematic Position of the Cæcilians," by J. S. Kingsley. The editorial board of TUFTS COLLEGE STUDIES for the current year is made up of the President of the College and Professors Knight, Dolbear, Kingsley, and Wade.

REGISTRATION

Every student in the College of Letters is required to file with the Registrar or his assistant a plan of study for the first term, on the morning of the opening day of that term; and a similar plan for the second term, on the morning of the last day of the first term.

The registration for students not in the Engineering Department is made in duplicate on blanks furnished for the purpose, one copy to be kept on file by the Registrar, the other to be used, in case of Freshmen, by advisors, and in case of Special students and members of the upper classes, by major instructors. Each student also furnishes such data as are required by the Registrar for class lists. Registration is made in accordance with the following schedule:—

9–10 A.M.—All students except those in the Engineering Department will present themselves at the Secretary's office between these hours, and receive cards and assignments.

10–12 A.M.—All students, with the exception of members of the Freshman class, will meet their major instructors in accordance with assignments.

12–1 P.M.—Members of the Freshman class will meet their advisors in accordance with assignments.

2–4 P.M.—During this period students may consult instructors and file registration cards. All cards must be in the hands of the Registrar at or before four o'clock.

Arrangements for consultation may be made by individual students, toward the close of the first term.

Students will make their plans of study subject to the following regulations:—

No Freshman shall take a program of more than nineteen term hours during the first-half year.

No student shall take a program of more than eighteen term hours who has, for the preceding half-year, received the mark D in subjects aggregating three term hours, or the mark C in subjects aggregating more than six term hours.

No student shall take a program exceeding twenty-one term hours who, for the preceding half-year, has received the mark C in subjects aggregating three term hours, or the mark B in subjects aggregating more than nine term hours.

These rules do not apply to Physical Training.

Each student in the Engineering Department is required to file with the Secretary, on days as above described for other students, a plan of study, together with such data for class lists as shall be required.

Registration is made in accordance with the following schedule:—

10–12 A.M.—Students will register at the Secretary's office between these hours.

9–12 A.M.—During this time the instructors in the department may be consulted.

A registration fee of two dollars is imposed upon students in all departments who fail to register in person during the time prescribed above. This fee must be paid to the College Treasurer or his representative before registration can be permitted. Students are not recognized as members of classes until they have met all requirements of registration.

During the hours set apart for registration, instructors may be seen for consultation and for approval of plans of study, in rooms to be announced by posted bulletins.

PROGRAM

The unassigned subjects in the five o'clock column of the program are so far as possible assigned at a meeting in Ballou 4 at 12.30 P.M. on the second day of the first half-year, and at 4 P.M. on the first day of the second half-year. Every student concerned is required to be present at this time, either in person or by a proxy furnished with a complete tabular program of class engagements. Every instructor concerned is expected to to be present in person. These appointments supersede all others. No assignment or change of hour is official except as posted by the Committee on Program.

Any instructor is permitted, after the second full week of a term, to transfer a subject to another program hour, under the following conditions: (a) all students taking the subject must have the new hour free; (b) previous notice must be given to the Committee on Program; (c) the change, if finally made, must be reported at the College Office.

If such a change can be made in two consecutive years, the subject may be permanently transferred to the new hour.

The numbering of new subjects is to be determined by the Committee on Program in consultation with the respective instructors.

PROMOTIONS

Students in the courses leading to the degrees of A.B. are registered as Sophomores when they have twenty-six term hours to their credit; as Juniors when credited with fifty-eight term hours; and as Seniors when credited with ninety term hours.

Students in the Engineering courses fail of promotion if they have deficiencies amounting to more than six term hours in the prescribed work of the year. The Engineering Committee will be in session from nine to twelve o'clock in the forenoon of the second day of the fall examinations, to consider the programs of such students in Engineering as have six or more term hours of conditions, or have failed to fulfil requirements imposed at the close of the previous year.

All prescribed work must be completed by the end of the Junior year, and all conditions must be removed on or before June 1st of the Senior year.

MAJOR SUBJECTS

Each student shall choose a major subject before the beginning of the Sophomore year.

A change of major subject may be made not later than the end of the Junior year, by vote of the Faculty, on petition approved by the two major instructors concerned.

A second major subject may be granted not later than the end of the Junior year, under the same conditions.

ADMISSION FROM OTHER COLLEGES

Students entering Tufts College, after pursuing study in any other college of equal rank, are credited with the number of hours of work actually done toward the requirements of Tufts College, as certified by the proper authorities of the college from which the student comes. Such students must present satisfactory certificates showing the amount and character of work already accomplished, in order to obtain credit on a course of this College.

SPECIAL STUDENTS

Students who are not candidates for a degree, and who wish to pursue a special course of cognate studies, will be admitted to the College, subject to the following regulations:—

1. Every Special Student shall choose a major department, and shall make up a plan of study under the direction and subject to the approval of the major instructor.

2. The student shall satisfy the instructor in each subject included in the approved plan of study that he is able to pursue the work.

3. A Special Student, on leaving College, shall be entitled to a certificate giving the grade attained in each subject pursued, and signed by the President and the Registrar.

4. Special students in Electrical Engineering are required to pass examinations in General Physics, Trigonometry, and Elementary Calculus.

TERMS AND VACATIONS

The college year begins on the third Thursday in September, and ends at Commencement, the third Wednesday in June. The year is divided into two terms of eighteen weeks of work each. There are no college exercises during a recess of three days at Thanksgiving, two weeks at Christmas, and one week from the Wednesday evening preceding the first Thursday in April to the following Wednesday evening. On public holidays,—Washington's Birthday, the nineteenth of April, the seventeenth of June, and Memorial Day,—the college exercises are suspended. An examination period of ten days is held at the close of each half-year, during which time the daily class exercises are suspended.

A fine of two dollars will be levied on each student who shall fail to report in person to the Secretary of the Faculty or his deputy within two hours after the last program appointment of the student preceding each vacation of more than a single day, or within two hours before his or her first program appointment following each vacation of more than a single day. Such registration must take place during the regular office hours of the Secretary. The regularly appointed registration of studies after the summer vacation shall be construed as reporting in person.

ABSENCES

In case of absence, from any cause, involving more than three consecutive progam appointments, report is required to be made, either in person or by mail, messenger, or prepaid message, to the Secretary of the Faculty, together with the reason for such absence, and a statement of its probable duration, if it is to continue. This report may be made before the beginning of such absence. For the first failure to make such a report a fine of fifty cents shall be levied, and for each subsequent failure a fine of two dollars. In case of the anticipated absence of any student organization numbering not less than ten persons, notice may be given for all by one authorized representative or manager.

Not more than two hours previous to entering upon college work, after an absence involving more than three consecutive program appointments, each student shall report in person to the Secretary of the Faculty or his representative. In case of failure, fines of fifty cents and two dollars shall be levied, as above provided. Reports of the return of organizations may be made by the managers.

A report filed in accordance with these regulations shall not take the place of the required registration before and after vacations of more than a single day.

Students intending to leave college or to drop a single subject are required to report as for the beginning of an absence.

The above requirements will be waived in the case of individuals only in the event of serious illness or accident; and for the college at large only in case of storms so heavy as to block the customary avenues of communication and traffic.

EXPENSES

The charge for instruction in all departments in the College of Letters, except the Department of Engineering, is *one hundred dollars* a year, or *four hundred dollars* for the full course leading to any degree other than in Engineering, whether the course be completed in three, four, or more years.

The charge for instruction in the Department of Engineering is *one hundred and twenty dollars* a year.

Students in the chemical laboratories are charged for breakage, and *four dollars* a term for materials used. A fee of *two dollars* a term, payable in advance, is required of all students taking laboratory work in Biology. Students who take shop-work, except those in the engineering courses, are charged extra.

Half room-rent, including heat, ranges from twenty-five to ninety-one dollars, in the several dormitories for men. In those for women, half room-rent ranges from thirty to eighty-five dollars. Students furnish their own rooms. Any damage done by students to college property is charged in the term bills. Rooms in the college halls will be open for occupancy of

students on and after the Wednesday of the week preceding the opening of the college year. Non-resident students in all departments, except the Medical and Dental Schools, are subject to a fixed annual charge of ten dollars, in return for which a place for study is provided in Ballou Hall, or elsewhere.

Every student is required to deposit with the Bursar of the College either a bond with two satisfactory sureties for the sum of *two hundred dollars*, or the sum of *one hundred dollars* in cash, which sum, with interest at the rate of four per cent. yearly, will be returned when the student leaves the College, his term bills first being paid in full. No officer or student of the College will be accepted as a bondsman.

Students may deposit with the Bursar money for safe keeping. A receipt will be given, and the money, or any part of it, may be withdrawn on demand.

The charges for each year are contained in two bills, of which the first is made at the middle of the year, and is payable on the first day of March; the second is made immediately after Commencement, and is payable on the first day of the following college year; but the second bill of the Senior year must be settled by the Saturday before Commencement, or graduation will not be permitted. All college charges are payable to the Bursar, and all arrangements with regard to rooms are to be made with him.

The Executive Committee of the Trustees has power to order the suspension or dismissal of a student for failure to keep his bills promptly paid, or for other good and sufficient cause.

By an arrangement with the Somerville Hospital, students are assured free hospital treatment in case of illness, during their entire course. The cost to each student is two dollars a year.

Students board in commons at $3.75 per week; in private families at $3.50 to $5.00 for table board. Other expenses, such as for light, furniture, books, clothing, washing, and incidentals, vary with the economy of each student.

The following estimates represent the fixed annual expenses:—

Tuition	$100.00	$100.00
Physical Culture, including gymnasium and grounds	10.00	10.00
Reading-room	1.00	1.00
Hospital	2.00	2.00
Board, $3.50 to $5.00 a week (36 weeks)	126.00	180.00
Total	$239.00	$293.00

For the expenses of students of Engineering, consult the table of contents, under "Department of Engineering."

OFFICE HOURS

The President may be found in the Faculty Room in the morning, from 8.45 to 9.45. The office of the Registrar and Secretary is open every morning, from 8.45 to 12.45, and every afternoon except Saturday, from 2.00 to 5.00. The Bursar will be in his office in Ballou Hall during term time, Monday, Wednesday, and Friday morning, from 8.30 to 12.00 o'clock.

SCHOLARSHIPS

Awards of scholarships are made by the Board of Trustees, on the recommendation of the Faculty. The obtaining of a scholarship for one year does not constitute any title to a second nomination. Application for scholarships must be filed with the Bursar on blanks furnished for the purpose, on or before the tenth day of October; and, if the applicant be a minor, must be sanctioned by his parent or guardian. Scholarships will be granted, in general, only to students actually in need of such aid. No one need apply who has not made satisfactory progress, or who has come under any grave censure in the course of the year.

Scholarships are available for those students only whose term bills are fully paid within ten days after the opening of each college term, or after such bills shall have become due. The bills of any student whose connection with the College ceases are due at that time. The term bills of members of the graduating class are payable on the Saturday preceding Commencement day.

No scholarship is available to any student who is not a resident of a college dormitory, unless excused in writing from such residence by the authority of the Executive Committee of the Board of Trustees.

The following scholarships, the yearly income of which is one hundred dollars each, are awarded annually by the Trustees, but, except in special cases, when the donor has otherwise stipulated, the Trustees will award scholarships in the sum of fifty dollars each.

THREE STATE SCHOLARSHIPS.—Established in accordance with a resolve of the Commonwealth.

FIVE HOWLAND SCHOLARSHIPS.—Established from the income of the bequest of the late Edwin Howland, of South Africa.

FIVE WALKER MATHEMATICAL SCHOLARSHIPS.—Established in honor of the late William J. Walker, M.D., of Newport, R. I., and payable from the income of the Walker Fund.

TWO MOSES DAY SCHOLARSHIPS.—Founded by the late Moses Day, of Roxbury.

THE A. A. MINER SCHOLARSHIP.—Founded by the late A. A. Miner, D.D., of Boston.

THE REBECCA T. ROBINSON SCHOLARSHIP.—Founded by the late Charles Robinson, LL.D., of Newton.

THE WILLIAM OSCAR CORNELL SCHOLARSHIP.—Founded by William Oscar Cornell, of Providence, R. I.

THE ARA CUSHMAN SCHOLARSHIP.—Founded by Ara Cushman, of Auburn, Me. This scholarship is not available during the present year.

THE LAURA A. SCOTT SCHOLARSHIP.—Founded by Mrs. Laura A. Scott, of Ridgefield, Conn.

THE STOW SCHOLARSHIP.—Founded by the late Mrs. Eugenia D. Stow, of Meriden, Conn.

THE NORCROSS SCHOLARSHIP.—Founded by James A. and Mrs. Mary E. Norcross, of Worcester.

THE ANDERSON SCHOLARSHIP.—Founded by John M. Anderson, of Salem, in the name of John M. and Rebecca Anderson.

THE TRAVELLI SCHOLARSHIP.—Founded by Mrs. Emma R. Travelli, of Newton.

THE WHITTIER SCHOLARSHIP.—Founded by the late Charles Whittier, of Roxbury, in the name of Charles and Eliza Isabel Whittier.

THE TALBOT SCHOLARSHIP.—Founded by Newton Talbot, of Boston.

THE SIMONS MEMORIAL SCHOLARSHIP.—Founded by Mrs. Mary A. Simons, of Manchester, N. H., in memory of Hiram H., Augustus, and Frank Simons.

THE AMASA AND HANNAH L. WHITING SCHOLARSHIP.—Founded by Mrs. Hannah L. Whiting, of Hingham.

THE MARTHA GOLDTHWAITE MEMORIAL SCHOLARSHIP. — Founded by the late Willard Goldthwaite, of Salem.

THE ANDREW J. CLARK MEMORIAL SCHOLARSHIP.—Founded by Mrs. Abbie B. Clark, of Orange.

THE SARAH E. SAYLES MEMORIAL SCHOLARSHIP. — Founded by the late Albert W. Sayles, of Lowell.

THE COUSENS SCHOLARSHIP.—Founded by John E. Cousens, of Brookline, in the name of John E. and Sarah C. Cousens.

THE BENJAMIN F. SPINNEY SCHOLARSHIP.—Founded by Benjamin F. Spinney, of Lynn.

THE HENRY F. BARROWS SCHOLARSHIP.—Founded by Henry F. Barrows, of North Attleboro.

THE ELLERY E. PECK MEMORIAL SCHOLARSHIP.—Founded by Henry Rollins, of Bangor, Me. The income of this scholarship is not at present available.

THE J. H. MORLEY MEMORIAL SCHOLARSHIP.—Founded by Herbert Small Morley, of Templeton.

THE EDWIN H. CHAPIN MEMORIAL SCHOLARSHIP.—Founded by friends of the late E. H. Chapin, D.D., in New York City.

THE THOMAS A. GODDARD MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HOSEA BALLOU, 2D, MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HENRY E. COBB SCHOLARSHIP.—Founded by the late Henry E. Cobb, of Boston.

THE MARY ANN WARD SCHOLARSHIP.—Founded by Sylvester L. Ward, of Boston.

THE MARIA P. WINN SCHOLARSHIP.—Established from a bequest of the late Mrs. Maria P. Winn, of Woburn.

THE JOSEPH D. PEIRCE MEMORIAL SCHOLARSHIP.—Founded by the children and other relatives of the late J. D. Peirce, D.D., of Attleboro.

FIVE JOHN AND LUCY H. STOWE SCHOLARSHIPS.—Five scholarships for women students, founded by the late Mrs. Lucy H. Stowe, of Lawrence.

TWO SIMMONS SCHOLARSHIPS.—Founded by the will of Robert F. Simmons, of Attleboro, in the name of Mary F. and Robert F. Simmons.

THE JOSHUA S. AND HARRIET N. WHITE SCHOLARSHIP.—Founded by the late Joshua S. White, of Pawtucket, R. I.

THE JOHN B. PERKINS SCHOLARSHIP. — Founded by Ann Maria Perkins, of Medford.

TWO BARNARD SCHOLARSHIPS.—Founded by Caroline M. Barnard, of Everett.

THE BARTLETT SCHOLARSHIP.—Founded by the late Mrs. Nancy Bartlett, of Milford.

THE B. H. DAVIS SCHOLARSHIP.—Founded by the Rev. B. H. Davis, of Weymouth, for the benefit of students of the College of Letters who are preparing to enter the Christian ministry.

THE LATIMER W. BALLOU SCHOLARSHIP.—Founded by the late Latimer W. Ballou, of Woonsocket, R. I.

THE NATHANIEL WHITE SCHOLARSHIP.—Founded by Armenia S. White, of Concord, N. H.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

THE RHODE ISLAND SCHOLARSHIP.—Founded by several persons in Rhode Island.

TWO CHARLES AND FANNIE A. MINER BOOTH SCHOLARSHIPS.—Founded by the late Charles Booth, of Springfield, Vermont.

THE LUTHER GILBERT SCHOLARSHIP.—Founded by Mrs. Luther Gilbert, of Roxbury.

THE ORMSBEE CLASS SCHOLARSHIP.—Founded by Benjamin F. Smith, of Pawtucket, R. I.

THE MARY AND LUTHER GILBERT SCHOLARSHIP.—Founded by Mrs. Mary G. Knight of Roxbury, for the benefit of women.

THE JAMES M. AND EMILY COOK SCHOLARSHIP.—Founded by Henrietta J. States, of Roxbury.

THE WILLIAM H. SHERMAN SCHOLARSHIP.—Founded by the late William R. Sherman, of Boston.

The following scholarships of fifty dollars each are awarded annually:—

THE A. A. MINER SCHOLARSHIP.—Founded by the late A. A. Miner, D.D., of Boston.

THE PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of Brooklyn, N. Y.

THE MOSES DAY SCHOLARSHIP.—Founded by the late Moses Day, of Roxbury.

THE JOSEPH H. WALKER SCHOLARSHIP.—Founded by Joseph H. Walker, of Worcester.

THE GEORGE C. THOMAS SCHOLARSHIP.—Founded by George C. Thomas, of Philadelphia, Pa.

THE ALBERT W. SAYLES SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

The following scholarships are awarded under special conditions:—

THE GREENWOOD PRIZE SCHOLARSHIP IN ORATORY.—Founded by the late Mrs. Eliza M. Greenwood, of Malden, and given to such student as shall have made, as the result of faithful work, together with at least a fair degree of attainment, the greatest improvement in Oratory.

THE WENDELL PHILLIPS MEMORIAL SCHOLARSHIP.—Founded to perpetuate the name, fame, and influence of Wendell Phillips. This scholarship is to be awarded to a student who has completed the Freshman and Sophomore years of his course, and he is to have the benefit of it during the remainder of his course. The beneficiary must be of sound body, high character, and ability in declamation and debate, and must comply with certain special conditions, including participation in a competitive debate of the applicants at the end of the Sophomore year. The specific conditions governing the award of this scholarship may be obtained by those intending to apply therefor from the Secretary of the Faculty, to whom application should be made early in the Sophomore year. The income of this scholarship is at present seventy dollars.

THE MOSES TRUE BROWN SCHOLARSHIP.—A scholarship yielding fifty dollars annually, founded by the late Moses True Brown, of Sandusky, Ohio, formerly Professor of Oratory in Tufts College, for encouraging and assisting worthy students in the department of Oratory.

THE PRIZE SCHOLARSHIP OF THE CLASS OF 1898.—The sum of fifty dollars is given annually by the class of 1898 to that Senior who at the end of the Junior year shall have maintained the highest excellence in a course of study broadly and wisely chosen.

LOAN FUND FOR WOMEN.—The Woman's Universalist Missionary Society of Massachusetts maintains a fund which is loaned to deserving women students, in sums of one hundred dollars, at four per cent. This fund now amounts to about three thousand dollars.

APPOINTMENTS.—The pay of a chapel monitor is *fifty dollars* a year; that of the organist, *one hundred and fifty dollars*.

PRIZES

GODDARD PRIZES.— In the second term of the academic year four prizes of *fifteen dollars* each are assigned from the Goddard Prize Fund, as follows:—

A prize for the best examination, by a member of the Junior or Senior class, on the Agricola of Tacitus, or the sixty-fourth poem of Catullus, or a play of Plautus or Terence, or the Ars Poetica of Horace.

A prize for the best examination in Plato's Symposium, or the Agamemnon of Æschylus, including an account of the author and his works.

A prize for the best examination in the Mathematics of the first year.

The translations must be left at the President's office by the first day of May, in sealed envelopes, accompanied by sealed letters containing the authors' names.

RHETORICAL PRIZES.—Six prizes are awarded as follows:—

Two prizes, of *twenty* and *ten dollars* respectively, to the best readers among students who have taken six term hours in Oratory.

Two prizes, of *twenty* and *ten dollars* respectively, to students who have taken four term hours in Oratory, for the best exhibition of improvement and skill in elocution.

Two prizes, of *twenty* and *ten dollars* respectively, on the same conditions, to students who have taken two term hours in Oratory.

The rhetorical prizes are awarded by a committee, chosen by the Faculty, who judge the work presented by the competitors upon the public day appointed for that purpose. In order to enter the public competition, candidates, as well as their selections, must be approved by the Professor of Oratory. A preliminary competition is held about ten days before the competition announced in the calendar, at which a committee of the Faculty determine the contestants in the final and public readings.

ENTRANCE EXAMINATION PRIZES.—Two prizes, of *thirty* and *twenty dollars* respectively, are awarded for the best entrance examinations. No one will be considered a candidate for such prize unless he has passed the regular examinations in all the subjects required for admission to the College, and has been admitted without conditions. These prizes are payable at the end of the first term in College.

The foregoing prizes are not awarded, unless in the opinion of the respective judges there is sufficient merit in the several contests to warrant their distribution.

A regular day has been appointed for the annual announcement of the award of prizes and the assignment of Commencement parts,—the first Wednesday after the Thanksgiving recess.

COMMITTEE OF INFORMATION

It is the object of the Committee of Information to bring the student body in touch with the business and professional world by supplying information concerning positions that are available for graduates, or that may be temporarily filled by undergraduates during the summer vacation. By a systematic record, in which undergraduates and alumni coöperate, information is gratuitously at the disposal of both employer and employed.

HONORS AND DEGREES

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the College of Letters who shall have attained Grade A in approved subjects aggregating not less than eighteen term hours in a major department, and an average of Grade B in the collateral subjects. Subjects marked in the catalogue with an asterisk (*) will not count for Honors. Those marked with a double asterisk (**) will be counted for Honors only when special requirements, to be defined by the instructors, have been complied with. Final Honors will be conferred only upon recommendation of the head of the department in which Honors are desired.

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the Engineering courses who shall have complied with the following conditions:—

In the two years immediately preceding graduation:—

1. He must have attained Grade A in the equivalent of six hours a week for a year in the subject in which he desires Honors.

2. He must also have attained Grade A in extra work in this or a cognate subject equivalent to three hours a week for a year.

3. He must have attained Grade B in the average of all his studies during this period.

The following subject in the Engineering Courses is open for Honors: ELECTRICITY.

HONORABLE MENTION will be made in the Commencement program and in the annual catalogue of a student who has attained, during the two years immediately preceding graduation, Grade A in nine term hours and not less than Grade B in three additional term hours of approved work in one department.

Subjects marked in the Catalogue with an asterisk (*) or with a double asterisk (**) are under the conditions explained in the preceding paragraph concerning Final Honors in the courses in Liberal Arts.

THE DEGREE OF BACHELOR OF ARTS, will be conferred at Commencement by the Trustees, on recommendation of the Faculty, upon students who shall have complied in a satisfactory manner with the conditions governing the degree as stated on pages 56 to 58.

THE DEGREE OF BACHELOR OF SCIENCE will be conferred upon students who shall have completed the Course in General Science, the Course in Biology, or in Chemistry, or the Medical Preparatory Course, complying in a satisfactory manner with the conditions stated on pages 101 to 105.

THE DEGREE OF BACHELOR OF SCIENCE in Civil Engineering, Electrical Engineering, Mechanical Engineering, or Chemical Engineering, will be conferred upon students who shall have completed the required course, as defined on pages 113 to 121.

Students of the courses in the College of Letters may so arrange their elective work as to make it possible to obtain the degree of Bachelor of Science in Civil Engineering, Electrical Engineering, Mechanical Engineering, or Chemical Engineering, after a graduate course of one year in the Engineering Department.

For the advanced degrees of MASTER OF ARTS, MASTER OF SCIENCE, and DOCTOR OF PHILOSOPHY, see announcement of the Graduate Department, pages 153 to 161.

THE DIVINITY SCHOOL

Faculty of the Divinity School

ELMER H. CAPEN, D.D., LL.D., PRESIDENT
Professor of Moral Philosophy and Political Economy

CHARLES H. LEONARD, A.M., D.D., DEAN
Goddard Professor of Homiletics and Pastoral Theology

HARRY G. CHASE, B.S., SECRETARY

WILLIAM R. SHIPMAN, A.M., D.D., LL.D.
Goldthwaite Professor of Rhetoric, and Professor of Logic

EDWIN C. BOLLES, PHD., D.D.
Dickson Professor of English and American History

WILLIAM G. TOUSEY, A.M., D.D.
Ryder Professor of Ethics and the Philosophy of Theism

GEORGE T. KNIGHT, A.M., D.D.
Packard Professor of Christian Theology

GEORGE M. HARMON, A.M., D.D.
Professor of Biblical Theology

WARREN S. WOODBRIDGE, A.M., B.D.
Woodbridge Professor of Applied Christianity

J. STERLING KINGSLEY, S.D.
Professor of Biology

HERBERT E. CUSHMAN, B.D., A.M., PHD.
Professor of Philosophy

DAVID L. MAULSBY, A.M.
Professor of English Literature and Oratory

THOMAS WHITTEMORE, A.B.
Assistant Professor of English

HENRY C. METCALF, A.B., Ph.D.
Professor of Political Science

LAWRENCE B. EVANS, PH.D.
Professor of History

CHARLES ST. CLAIR WADE, A.M.
Professor of Greek Language and Literature

CHARLES C. STROUD, A.B., M.D.
Instructor in Physical Training

NON-RESIDENT LECTURERS

FREDERICK W. HAMILTON, A.M., D.D.
The Vocation of the Preacher

HENRY W. RUGG, D.D.
Christian Missions

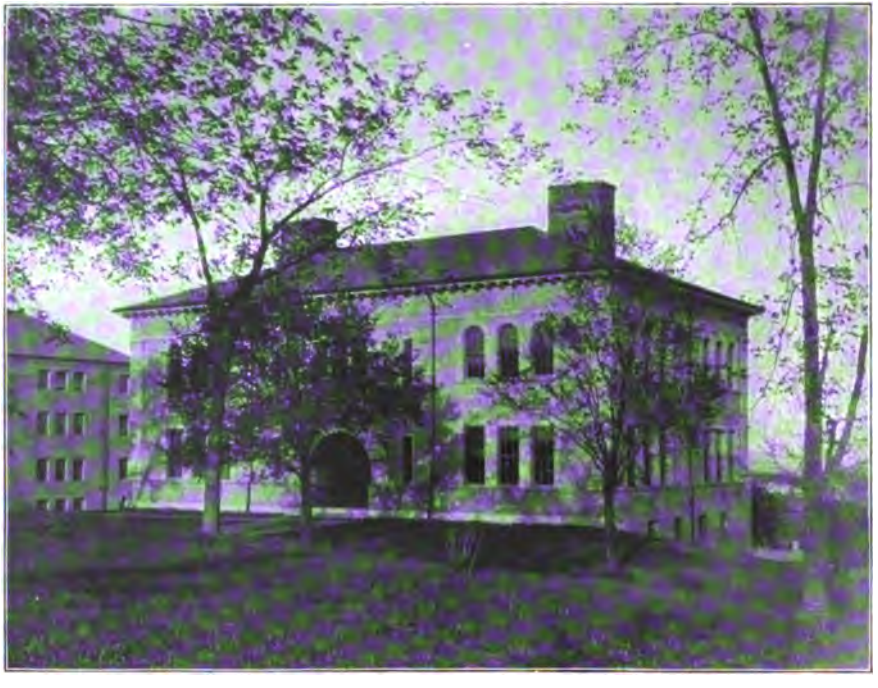
BYRON GROCE, LITT.D.
The Preacher as Teacher

HAROLD WILLIAMS, A.M., M.D.
The Care of the Body

CHARLES CONKLIN, A.M., B.D.
The Work of the Minister

COMMITTEE ON PROMOTIONS

Dean Leonard, *Chairman;* Professors Metcalf and Knight.



MINER HALL

The Divinity School

The Divinity School is one of the co-ordinate departments of Tufts College. Students of the School are members of the College, enjoying its privileges and subject to its regulations.

CONDITIONS OF ADMISSION

1. The Divinity School is open on equal terms to students of every denomination of Christians. Candidates unknown to the Faculty must present satisfactory testimonials as to character.

2. Bachelors of Arts whose course of study has included Greek are admitted to a three years' course without examination, as candidates for the degree of Bachelor of Divinity. Graduates holding other literary degrees than that of A. B. may be required to pass an examination in the subjects in which their college course differs from the A. B. course.

3. Undergraduates who enter for a degree must conform to the regular conditions of admission to the College of Letters as stated above, see pages 41 to 55.

4. Special students, not candidates for a degree, may be admitted, in accordance with the general custom of the College, to such departments of the regular work of the School as they are fitted to undertake.

Requirements for the Degree of Bachelor of Divinity

The College of Letters has lately decided that certain studies, hitherto pursued in the Divinity School only, are properly regarded as culture studies, and therefore offers them to all its students. Taking advantage of this fact, the student who enters College with Greek, and with other good preparation, may so

shape his course as to obtain the degree of Bachelor of Arts in four years, and that of Bachelor of Divinity in one more year.

Graduates from other institutions may obtain the degree of Bachelor of Divinity after having completed those parts of the course of this School which have not been included in their previous studies. The time thus required for those holding the degree of A.B. is three years or less.

In all cases, however, the ground of promotion and of graduation is the intellectual attainment of the individual student, and not a fixed requirement of a certain number of years of study, except that no degree will be granted for less than one year of resident work.

SYNOPSIS OF THE REQUIREMENTS FOR B.D.

[The unit here used (called the "term hour") is equivalent to one program hour a week for a half-year.]

	Term Hours
Language (Hebrew, Greek, and German)	24
Science (Mathematics, Physics, and Biology)	18
History (Civil and Religious)	27
Bible (Language, History, etc.)	33
Philosophy (Psychology, Logic, Ethics, Systematic Theology, etc.)	33
Sociology (Law, Economics, and Applied Christianity)	30
English (Rhetoric, Literature, Oratory, and Homiletics)	36
Physical Training	2
Total	203
Deduct (counted twice)	15
Total term hours	188

In order to do in five years the work included in this synopsis, the student must begin the prescribed course with his Freshman year, and must manifest ability to carry with profit so heavy a program. He may receive A.B. at the end of four years, or with B.D. at the end of his course, as he may choose.

For all divinity students the major instructor and official adviser on general matters relating to college affairs is the Dean of the Divinity School, or some appointed representative from the Divinity Faculty.

Departments of Instruction

Following is a statement of subjects of study selected from the statement for the College of Letters, the numbering and other marking being preserved for convenient reference. Those subjects are selected which are most likely to be chosen by the student who is preparing for the Christian ministry. A fuller statement is made (pages 192 to 199) mainly of those subjects that are specially related to the minister's profession. The student should understand, however, that all the work offered in the College of Letters is open to him, under the usual regulations.

ENGLISH

See subjects 1, 2, 5, 10, 11, 12, and 27, on pages 60 to 62 of this catalogue.

ORATORY

See subjects 1 and 2, pages 62, 63.

GERMAN

See subjects 1 to 3B, pages 63, 64.

GREEK

See subjects 1 and 2, pages 68, 69.

HEBREW

See subjects 1 and 2, page 71.

PHILOSOPHY

See subjects 1 to 8, pages 71 to 73.

HISTORY

See subjects 1 to 5, and 11 to 14, pages 74 to 77.

PUBLIC LAW AND ADMINISTRATION

See subjects 1 to 6, pages 77, 78.

POLITICAL SCIENCE

See subjects 1 to 3, pages 78,79.

MATHEMATICS

See subject 1, page 80.

PHYSICS

See subject 1, pages 81, 82.

BIOLOGY

See subject 1, pages 86, 87.

PHYSICAL TRAINING

See page 95.

OLD TESTAMENT

PROFESSOR WOODBRIDGE

The aim is to secure, chiefly through the English version, a working knowledge of the Old Testament, and an appreciative acquaintance with Hebrew thought and life. The course includes a history of the Book, a history of the people from whose literature the Book was made, a history of the literature itself in the separate books and in its development and forms, and critical and interpretative readings of the literature. Hebrew is offered as the foundation of a more critical study,

SUBJECTS

1. History of the Jews before Christ. A study of the political relations, institutions, and literature of the Jewish people. [History 11*] *Mon., Wed., Fri., 4.00.* PROFESSOR HARMON.

2. General Introduction: the English Bible, other versions, the manuscripts, the canon. Special Introduction: history of the literature, origin of particular books. *Mon., Wed., Fri., 9.45.* (1) PROFESSOR WOODBRIDGE.

3. The Hebrew Language [Hebrew 1†]: the elements of grammar. Translation of portions of Genesis, of the book of Ruth, and other selections. *Tu., Th., Sat., 11.45.* PROFESSOR WOODBRIDGE.

4. Hebrew Language [Hebrew 2†]: syntax, critical readings from the Historical Books, from the Prophets, and the Psalms. *Three hours a week.* PROFESSOR WOODBRIDGE.

5. (*a*) Principles of Criticism; Critical Analysis of Genesis; the Pre-exilean Prophets; Isaiah, with special reference to Authorship and Date; Readings from the Wisdom Literature. (1902-1903.) (*b*) The Development of Hebrew Law; the Prophets of the Exile; Post-exilian Literature; Hebrew Poetry. (1903-1904.) *Tu., Th., Sat., 8.45.* PROFESSOR WOODBRIDGE.

* See page 76.
† See page 71.

NEW TESTAMENT

PROFESSOR HARMON

1. New Testament History [History 12*]. This subject covers the history of the Jews during the lifetime of Jesus, including their relations to the Roman government, and their political, social, and religious institutions and customs. It also includes the origin, extension, and development of the Christian Church until the destruction of Jerusalem. Incidentally these results form the historical background for the study of the New Testament literature. The method includes lectures, references to sources of information in the library, reports in the class-room of results gathered from such sources, and frequent oral and written examinations.

2. New Testament Criticism. This subject covers the investigation of the origin and character of the Gospels and the apostolic literature, the aim being to acquire an understanding of the general conditions essential to the correct interpretation of the New Testament writings. The method pursued is the same as in New Testament History.

3. New Testament Exegesis. The work consists of lectures on methods of interpretation, followed by an examination of the Synoptic Gospels in the Greek, with the object of acquiring a knowledge of the ministry and teachings of Jesus. It includes also a study of the Pauline Epistles and the Johannine literature.

SUBJECTS

1. History of the beginnings of Christianity. A study of the relations of the apostolic church in its extension, and the rise of its literature. *Mon., Wed., Fri., 3.00.* (1) PROFESSOR HARMON.

2. New Testament Criticism. *Mon., Wed., Fri., 9.45.* (2) PROFESSOR HARMON.

3. New Testament Exegesis and Theology. *Mon., Wed., Fri., 11.45.* PROFESSOR HARMON.

* See page 76.

HISTORY OF RELIGIONS

PROFESSORS KNIGHT AND WOODBRIDGE

1. History of Non-Christian Religions [History 13*]. The primary aim of this study is a general knowledge and catholic temper regarding the great religions outside Christianity. A secondary utility is found in that a candid study of the excellences and defects of many religions renders the student more able to reject the false and more inclined to rest in the true, and to give it his confidence and strength.

The sources of information to which the student is referred are in the library. They embrace the important authorities, both original and secondary.

The religions studied are those of ancient Egypt, Chaldea, Greece, Rome, and Persia, of ancient and modern India, China, Japan, and Turkey.

The chief topics noted are: the deity; the forms and meaning of worship; the theory of ethics, and the sanctions of moral life, including the scheme of salvation; the actual condition of the people representing each religion.

For the study of each topic in turn, the class is furnished with a syllabus and references. The results of their investigation are criticised and co-ordinated by students and instructor in the class-room.

2. The history of Christianity: Church History [History 14†].

The purpose is to secure a knowledge of the leading facts and forces in the history of the Christian Church, in its various branches. By such a knowledge, discovering the causes now at work in religion, the student obtains a grasp of present facts and problems such as he can obtain from no other source. Incidentally he becomes familiar with theological terms, and is furnished with the tools of theological work. In general, since in some degree the individual grows as the mass has grown, he finds in this study an education, an orderly development of his faculties.

* See page 76.
† See page 77.

The topics generally studied in regard to each period are: the external growth of the Church and its relations to the State; the internal organization; intellectual life and doctrine; moral life; the form and substance of worship. In the latter part of the year, special study is made of the chief religious sects in the United States, and, lastly, of the history of doubt.

The books used by the student are mostly contained in the Library of the College and in that of the Universalist Historical Society.

In preparation for the regular class-room exercise, the student is provided with analysis of each topic in order, and with references to original and secondary authorities. The student brings the result of his investigation to the class-room, for criticism by his associates and instructor. At the completion of each topic the results are organized, and a written review held, the papers of which are returned, with comments as to truthfulness and mode of handling.

The students are also instructed in the methods of original investigation from primary authorities.

SUBJECTS

1. The Non-Christian Religions: Studies of the Religions and Civilizations of ancient Egypt, Chaldea, Greece, Rome, and Persia, and of Ancient and Modern India, China, Japan, and Turkey. *Tu., Th., Sat., 8.45.* (1) PROFESSOR KNIGHT.

2. Church History: History of the Church, of the Sects, and of Doctrines, from the Apostles to the Present Time; History of Doubt. *Tu., Th., Sat., 9.45.* PROFESSOR WOODBRIDGE AND PROFESSOR KNIGHT

ETHICS

[Philosophy 5, 7, 8. See pages 72, 73.]

PROFESSOR TOUSEY

Analytical and inductive study of the moral experience is followed by an attempt to develop a correct moral theory. Attention is given to the more important questions in ethical philosophy. Such doctrines as sentimentalism, hedonism, utilitarianism, intuitionalism, naturalism, and determinism are studied, not

merely in a critical spirit, but with a view to discover the special aspects of truth for which they stand.

A course is also offered in the history of ethical speculation, and of the development of moral customs and ideas. Finally, the bearing of ethical theory on the leading problems of the individual and the social life is discussed, particular attention being given to such subjects as duties, rights, education, charities, State aid, temperance, socialism. Some attention is also given to casuistry. The course concludes with a review of what is distinctively known as Christian ethics. The instruction throughout is shaped to bring into clearness the fundamental principles of morality, and to show their importance in the conduct of the personal life and in the moral guidance of others.

SUBJECT

1. The Moral Nature; Ethical Theory; Evolution of Morals; Practical Ethics; Ethics and Theism. *Mon., Wed., Fri., 10.45.* PROFESSOR TOUSEY.

2. Ethics, Historical and Critical. History of Ethical Speculation; development of moral customs and ideals. *Mon., Wed., Fri., 10.45.* (2) PROFESSOR TOUSEY.

3. Ethics, Applied. *Tu., Th., Sat.* 10.45. (2) PROFESSOR TOUSEY.

PHILOSOPHY OF THEISM

[Philosophy 14. See page 74.]

PROFESSOR TOUSEY

At the outset some attempt is made to articulate the final problem, and to indicate the various answers that have been proposed. The different modes of the theistic argument are then reviewed, their grounds scrutinized, and their logical value considered. This imposes a patient hearing and pains-taking judgment of objections which have found expression in earlier and later times. In treating of the office of reason in matters of belief, and of the limits of the understanding, both mysticism and agnosticism come in for notice; and in discussing the attributes of God, and His relation to the universe, pantheism and pessimism receive somewhat special attention. The general method here, as in Ethics, is to employ treatises available as

texts, and to supplement them by means of annotations, lectures, and parallel readings, the aim being to lead the student to the sources of evidence, and to establish a vigilant and correct method of inquiry. Much importance is attached to the dialectic of the class-room as securing a ready command of resources, and as a corrective of ill-defined notions and hasty inference. An effort is made to treat subjects in the light of contemporary criticism and the latest developments of science; and, by testing and chastening conclusions, to provide against fanaticism on the one hand and frivolity of judgment on the other.

SUBJECT

1. The Final Problem; Limits of the Intelligence; Theistic Arguments; Final Cause in Nature; Anti-Theistic Theories. *Mon., Wed., Fri., 11.45.*
PROFESSOR TOUSEY.

THEOLOGY

PROFESSOR KNIGHT

The purpose is, primarily, to assist the student to think independently on theological subjects, and to abide in the consequences. In pursuing this purpose, attempt is made to co-ordinate the products of biblical theology, religious history, natural theology, ethics, and, indeed, of all the proper sources of material, and thus to produce a scientific theology. It is believed that such a system will deserve and receive the student's confidence, and will enlist his energies.

The method includes several stages:—

1. The history of important doctrines and creeds, as a general introduction.

2. *a.* Special history of the topic in hand, with analysis and classification of opinions and theories according to their logical relations.

b. The collection of the facts, so far as given in the present state of knowledge, and the criticism of the theories on the basis of the facts.

c. The organization of the results into a scientific product.

d. Illustrative applications to practical problems,—ecclesiastical, political, social, and personal.

SUBJECTS

1. Historical Introduction. *Mon., Wed., Fri., 4.00.* (2)
PROFESSOR KNIGHT.

2. Theology; Anthropology; Soteriology; Eschatology; Critical Study of Modern Doctrines. [Philosophy 15.*] *Tu., Th., Sat., 11.45.*
PROFESSOR KNIGHT.

APPLIED CHRISTIANITY

PROFESSOR WOODBRIDGE

The topic of study is the ministry of the church in the life of the world. The objective point is the efficiency of pastor and church in the function of social uplift. The course covers one year, and is a series of lectures, supplemented by investigation. The lectures deal, in order, with the foundation principles of the ministry of the church, the proper scope and limitations of its work under these principles, efficient organization and best instrumentalities, and the specific duties which present-day life and problems make imperative. The course in investigation requires of the student a special study of some given community in its practical attempts at solving its own problems. He visits the institutions of religion and philanthropy, personally observes their work, and makes written report of the same for discussion in the class-room.

SUBJECT

1. The Relations of the Church to the Life of the Individual and to Social Problems. *Mon., Wed., Fri., 4.00.* PROFESSOR WOODBRIDGE.

HOMILETICS

PROFESSOR LEONARD

The course in Homiletics covers two years. The first year [English 27†] is devoted to the sermon as a literary production; analysis of portions of the Old and the New Testament, with a view to the homiletical use of texts. In the main, the work of this year is given to the theoretical part of the study.

The second year is devoted to the study of printed sermons, with special reference to form, expression, and the character and range of illustration; the composition and delivery of ser-

* See page 74.
† See page 62.

mons, which are criticised by the class and by the professor; lectures on invention and arrangement of material, style in spoken discourse, helps in sermon preparation from a study of character and literature, the homiletic habit, personality in preaching.

In the Homiletical Seminary the subjects vary from year to year. The object is the discussion of different phases of the teaching. Each student presents a careful study of at least one aspect of the general subject, and leads in the discussion.

SUBJECTS

1. The Idea and Structure of the Sermon; Homiletical Analysis · Studies in Plans. *Tu., Th., Sat., 11.45.* PROFESSOR LEONARD.

2. The Composition and Delivery of Sermons; Lectures on Preaching. *Tu., Th., Sat., 9.45.* PROFESSOR LEONARD.

PASTORAL THEOLOGY

PROFESSOR LEONARD

The course in Pastoral Theology considers the minister as organizer and director of church activities. The subjects discussed relate to the more private and personal care which the minister exercises toward the members of a single congregation, or toward others whom he may be expected to influence. Careful study is invited to the qualifications — spiritual, mental, social — of a good pastor, the methods of forming and strengthening a parish; the conduct of public worship, and the mode of conducting the special services of the church,—baptism, confirmation, the Lord's Supper, marriage, and the burial of the dead. The object of this course is the practical preparation of the pastor for his sacred duties. Seminaries are held from time to time for the free discussion of pastoral methods and personal religious work, with special reference to concrete questions of immediate interest to the young minister.

SUBJECT

1. The Pastor's Personal Qualifications and Duties; the Pastor as a L der of Thought and Worship; the Organized Work of the Parish; the Special Offices of Religion; Actual Work in Missions and Charities. *Tu., Th., Sat., 8.45.* (2) PROFESSOR LEONARD.

Summary

A synopsis of the Course of Study (for one who enters with Greek and Latin) leading to A.B. in four years, and B.D. in one more year, embracing all the regular requirements for both degrees :—

FRESHMAN YEAR

Subject	Instructor	Time
Mathematics 1*a*	Ransom	Tu. Th. Sat. 8.45
German 1	Colwell	Mon. Wed. Fri. 9.45
Greek 2	Wade	Mon. Wed. Fri. 2.00
Physics 1	Dolbear	Mon. Wed. Fri. 10.45
Old Testament 1 [History 11]	Harmon	Mon. Wed. Fri. 4.00
English 1 and 2	Maulsby and Whittemore	Tu. Th. Sat. 10.45
Oratory 1	Whittemore	Th. 2.00
Physical Training	Stroud	

SOPHOMORE YEAR

Subject	Instructor	Time
Old Testament 3 [Hebrew 1]	Woodbridge	Tu. Th. Sat. 11.45
German 3 (or 2)	Fay (or Colwell)	Tu. Th. Sat. (or Mon. Wed. Fri.) 8.45
English 5	Shipman	Tu. Th. 3.00 (1)
Philosophy 1 (or 2) and 5	Cushman	Tu. Th. Sat. 9.45
English 11 (or 12)	Maulsby	Mon. Wed. Fri. 2.00
New Testament 1 [History 12]	Harmon	Mon. Wed. Fri. 3.00 (1)
History 1	Evans	Mon. Wed. Fri. 10.45
Oratory 2	Whittemore	
Physical Training	Stroud	

JUNIOR YEAR

SUBJECT	INSTRUCTOR	TIME
Biology 1	Kingsley and Lambert	Tu. Th. 11.45, 2.00, 3.00
Philosophy 3 and 4	Shipman	Tu. Th. Sat. 10.45
English 12 (or 11)	Maulsby	Mon. Wed. Fri. 2.00
History of Religions 2 [History 14]	Woodbridge and Knight	Tu. Th. Sat. 9.45
History 7 (or 2, or 3)	Evans (or Bolles)	Mon. Wed. Fri. 3. (2) (or 8.45 or 10.45 for the year)
Public Law and Administration 1	Evans	Mon. Wed. Fri. 11.45 (1)
Old Testament 2	Woodbridge	Mon. Wed. Fri. 9.45 (1)
New Testament 2	Harmon	Mon. Wed. Fri. 9.45 (2)

SENIOR YEAR

SUBJECT	INSTRUCTOR	TIME
Political Science 1	Metcalf	Tu. Th. Sat. 10.45
Public Law and Administration 4, 5, or 6	Evans	Mon. Wed. Fri. 8.45
Old Testament 5	Woodbridge	Tu. Th. Sat. 8.45
New Testament 3	Harmon	Mon. Wed. Fri. 11.45
Ethics	Tousey	Mon. Wed. Fri. 10.45
Systematic Theology 1	Knight	Mon. Wed. Fri. 4.00 (2)
Homiletics 1 [English 27]	Leonard	Tu. Th. Sat. 11.45

FIFTH YEAR

SUBJECT	INSTRUCTOR	TIME
Political Science 2 and 3	Metcalf	Mon. Wed. Fri. 9.45
History of Religions 1 [History 13]	Knight	Tu. Th. Sat. 8.45 (1)
Philosophy of Theism [Philosophy 14]	Tousey	Mon. Wed. Fri. 11.45
Systematic Theology 2 [Philosophy 15]	Knight	Tu. Th. Sat. 11.45
Applied Christianity	Woodbridge	Mon. Wed. Fri. 4.00
Pastoral Theology	Leonard	Tu. Th. Sat. 8.45 (2)
Homiletics 2	Leonard	Tu. Th. Sat. 9.45

General Information

In addition to the information given on pages 169 to 184, the following is of interest to Divinity students.

RELIGIOUS OBSERVANCES

A religious service is held in the chapel in Miner Hall daily (except Saturdays and Sundays) at 1.45 P.M. Attendance is voluntary.

SUPPLEMENTARY LECTURES

Lectures, which bear upon the general work of the Christian ministry and upon special subjects of study, are given at intervals throughout the year by well-known clergymen of the vicinity.

The most noted divines of New England officiate every Sunday within easy distance, and may be studied by the student in respect to their teachings and their methods. It is the policy of the school to encourage the judicious use of these important instrumentalities of culture.

LICENSE TO PREACH

The regular time for applying for licensure is near the close of the first half of the Senior Year. Before that time the members of the Divinity School are not allowed to preach.

BUILDINGS FOR THE USE OF THE DIVINITY SCHOOL

Miner Theological Hall contains eight large, well-lighted and well-ventilated lecture-rooms, and a special room for the meetings of the Faculty. Until other buildings are provided, one of the rooms in this hall is used for the Historical and Reference Libraries, and one is appropriately furnished for the religious services of the school. A third room in the same hall is furnished as a parlor, and is known as the Maria Miner Reception Room.

Paige Hall, the dormitory of the Divinity School, contains thirty-six single rooms, heated by steam and lighted by gas. Each room is carpeted, and provided with all necessary furniture—except sheets, blankets, pillow-cases, and towels.

EXPENSES AND PECUNIARY AID

Students in the Divinity School are charged *one hundred dollars* annually for tuition. This charge includes the privilege of occupying a room in Paige Hall, and provision for heating and caring for it.

The following scholarships are assigned exclusively to Divinity students; certain prizes are also available under conditions, especially as described on pages 181, 182 of this catalogue.

The General Convention of Universalists aids students by free scholarships, not exceeding one hundred and twenty-five dollars a year to any one student, subject always to the recommendation of the Faculty of the Divinity School. Those students, also, who are in the regular course are permitted to preach, under the direction of the Faculty, during the year-and-a-half preceding their graduation. In this way they may add to their pecuniary resources.

THE GREENWOOD SCHOLARSHIP.—The income of one thousand dollars, bequeathed by the late Mrs. Eliza M. Greenwood, of Malden, is given in prizes to members of the Divinity School, for excellence in the Department of Oratory.

THE DOCKSTADER SCHOLARSHIP.—The income of ten thousand dollars, given by George A. Dockstader, of New York, is appropriated to the aid of needy and worthy students.

The following scholarships amount to fifty dollars each:—

THE WHITTEN SCHOLARSHIP.—Founded by Mrs. Maria F. Whitten, of Cambridge.

THE HOLT SCHOLARSHIP.—Founded by Miss Celia Holt, of Stafford, Conn.

THE HENRY L. BALLOU SCHOLARSHIP.—Founded by Susan Ballou, of Woonsocket, R. I.

TWO BRADLEE SCHOLARSHIPS.—Founded by the late Caleb D. Bradlee, D.D., of Brookline.

TWO GOLDTHWAITE SCHOLARSHIPS.—Founded by the late Willard Goldthwaite, of Salem.

THE SARAH ELIZABETH PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of Brooklyn, N. Y.

TWO LUCIUS R. PAIGE SCHOLARSHIPS.—Founded by the late Lucius R. Paige, D.D., of Cambridge, Mass.

The income of five hundred dollars, given by REV. JOHN VANNEVAR, is used in the purchase of books for the Department of Homiletics.

THE MEDICAL SCHOOL

Medical Faculty*

ELMER HEWITT CAPEN, A.M., D.D., LL.D. . . . . Tufts College

HAROLD WILLIAMS, A.B., M.D. . . . . 528 Beacon St., Boston
DEAN, *and Professor of the Theory and Practice of Medicine*

CHARLES PAINE THAYER, A.M., M.D.
Tufts College Medical School
SECRETARY, *and Professor of Anatomy*

HENRY WATSON DUDLEY, M.D. . . . . Abington
Professor of Pathology, Emeritus, and Lecturer on Legal Medicine

JOHN LEWIS HILDRETH, A.B., M.D., LL.D.
Professor of Clinical Medicine, Emeritus 14 Garden St., Cambridge

HENRY JABEZ BARNES, M.D. . . . . 429 Beacon St., Boston
Professor of Hygiene

ERNEST WATSON CUSHING, A.B., M.D., LL.D.
168 Newbury St., Boston
Professor of Abdominal Surgery and Gynaecology

EDWARD OSGOOD OTIS, A.B., M.D. . . . 381 Beacon St., Boston
Professor of Pulmonary Diseases and Climatology

CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree
Professor of General Chemistry

MORTON PRINCE, A.B., M.D. . . . . 458 Beacon St., Boston
Professor of Diseases of the Nervous System

HENRY BECKLES CHANDLER, C.M., M.D. 34½ Beacon St., Boston
Professor of Ophthalmology

FREDERIC MELANCTHON BRIGGS, A.B., M.D.
Professor of Clinical Surgery 31 Massachusetts Ave., Boston

FRANK GEORGE WHEATLEY, A.M., M.D. . . . . North Abington
Professor of Materia Medica and Therapeutics

GEORGE ANDREW BATES, D.D.S. . . . . Auburndale
Professor of Histology

* The names of the Faculty of Medicine, after the President, the Dean, and the Secretary, are arranged in groups: Professors, Assistant Professors, Demonstrators, Instructors, and Assistants. Within each group the order is that of academic seniority.

GEORGE HAMLIN WASHBURN, A.B., M.D.
Professor of Obstetrics 377 Marlborough St., Boston

ARTHUR EVERETT AUSTIN, A.B., M.D. 163 Suffolk Road, Newton
Professor of Medical Chemistry and Toxicology

HORACE DAVID ARNOLD, A.B., M.D. . . 427 Beacon St., Boston
Professor of Clinical Medicine

TIMOTHY LEARY, M.D. . . . . 20 Sunset St., Roxbury
Professor of Pathology and Bacteriology

JAMES SULLIVAN HOWE, M.D. . . . . 15 Charles St., Boston
Professor of Dermatology

GEORGE WARTON KAAN, M.D. . . . . 419 Boylston St., Boston
Professor of Clinical Gynaecology

EDWARD MAVERICK PLUMMER, M.D. 5 Adams St., Charlestown
Professor of Otology

EDWARD BINNEY LANE, M.D. . . . Insane Hospital, Dorchester
Professor of Mental Diseases

HERBERT WARREN WHITE, M.D. . 151 Humboldt Ave., Roxbury
Assistant Professor of Theory and Practice of Medicine

HOWARD SUMNER DEARING, A.M., M.D. 607 Tremont St., Boston
Assistant Professor of Clinical Medicine

WILLIAM ELISHA CHENERY, A.B., M.D.
Assistant Professor of Laryngology 222 Huntington Ave., Boston

EDMUND CHANNING STOWELL, A.B., M.D.
9 Massachusetts Ave., Boston
Assistant Professor of Children's Diseases

GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D.
Assistant Professor of Physiology 150 St. Botolph St., Boston

FRANK LEE DRUMMOND RUST, M.D. . 543 Boylston St., Boston
Assistant Professor of Ophthalmology

GARDNER WELD ALLEN, A.B., M.D. 419 Boylston St., Boston
Assistant Professor of Genito-Urinary Surgery

CHARLES FAIRBANK PAINTER, A.B., M.D.
Assistant Professor of Orthopedic Surgery 86 Bay State Road, Boston

JOHN LINCOLN AMES, M.D. . . . . 72 Chestnut St., Boston
Assistant Professor of Clinical Medicine.

EUGENE THAYER, A.B., M.D. . . . 2683 Washington St., Roxbury
Demonstrator of Anatomy

OTHER INSTRUCTORS

EDWARD LAMBERT TWOMBLY, A.B., M.D.
Instructor in Clinical Medicine 406 Massachusetts Ave., Boston

GEORGE ARTHUR WEBSTER, M.D. . . . 419 Boylston St., Boston
Instructor in Otology

JOHN JENKS THOMAS, A.M., M.D. . . 88 Bay State Road, Boston
Instructor in Neurology

KARL AUGUST HOCH, M.D. . . . . McLean Hospital, Waverley
Instructor in Neuro-Pathology

RICHARD FITCH CHASE, M.D. . . . 246 Huntington Ave., Boston
Instructor in Clinical Medicine and Lecturer on Gastro-Intestinal Diseases

THEODORE CHARLES ERB, M.D. . . 159 St. Botolph St., Boston
Instructor in Obstetrics

ROBERT WORTHINGTON HASTINGS, A.M., M.D.
The Beaconsfield, Brookline
Instructor in Theory and Practice of Medicine and Assistant in Pediatrics

CHARLES DAVISON KNOWLTON, M.D. 574 Warren St., Roxbury
Instructor in Pathology and Bacteriology

EDWARD ELIPHALET THORPE, M.D. . 711 Boylston St., Boston
Instructor in Medical Chemistry

WARREN FISHER GAY, A.B., M.D. . 416 Marlborough St., Boston
Instructor in Surgery and Assistant in Anatomy

FREDERICK WARREN PEARL, A.B., M.D.
Hotel Vendome, Commonwealth Ave., Boston
Instructor in Operative and Clinical Surgery and Assistant Demonstrator of Anatomy

FRANCIS DENNIS DONOGHUE, M.D. 409 Marlborough St., Boston
Instructor in Clinical Surgery

HORACE SHERIDAN MORAN, M.D. . . . 86 Warren St., Roxbury
Instructor in Obtsetrics

JOHN INNES FRENCH, M.D. . . . . 2A Park St., Boston
Instructor in Materia Medica and Therapeutics

JOHN SHEPARD MAY, M.D. . . . . 219 Warren St., Roxbury
Instructor in Obstetrics and Assistant in Clinical Medicine

ELIZABETH ANGELA RILEY, M.D. . . . . 483 Beacon St., Boston
Instructor in Gynaecology and Abdominal Surgery

FREDERICK FINCH STRONG, M.D. . 178 Huntington Ave., Boston
Instructor in Electro-Therapeutics and Haematology

JAMES WILLIAM HINCKLEY, M.D. . . 18 Huntington Ave., Boston
Instructor in Obstetrics

ELWOOD TRACY EASTON, M.D. . . . . 603 Tremont St., Boston
Instructor in Ophthalmology

HARRY CALDWELL PARKER, M.D.
Instructor in Ophthalmology 382 Commonwealth Ave., Boston

FRANK PERCIVAL WILLIAMS, M.D. . Warren Chambers, Boston
Instructor in Rectal Diseases

HARRY HOMER GERMAIN, M.D. . . . . 173 Beacon St., Boston
Instructor in Clinical Surgery

LUTHER GORDON PAUL, M.D. . . . . 10 Exeter St., Boston
Instructor in Clinical Surgery

ARTHUR PATTERSON CHADBOURN, A.B., M.D.
Assistant in Clinical Medicine 225 Marlborough St., Boston

WILLIAM EASTMAN FAY, A.B., M.D.
Assistant in Clinical Medicine 366 Commonwealth Ave., Boston

CHARLES HENRY WINN, M.D. . . . . 1474 Tremont St., Boston
Assistant in Clinical Medicine

DANIEL HIRAM CRAIG, M.D. . . . . 158 Newbury St., Boston
Assistant in Clinical Gynaecology

EDWARD ALLEN PEASE, M.D. . . . . 483 Beacon St., Boston
Assistant in Clinical Gynaecology

ARTHUR WILLARD FAIRBANKS, M.D.
Assistant in Clinical Medicine 362 Commonwealth Ave., Boston

ELMON ARTHUR BURNHAM, A.B., M.D.
Assistant in Clinical Medicine 144 Huntington Ave., Boston

ROBERT MICHAEL MERRICK, M.D. . . 15 Adams St., Dorchester
Assistant in Clinical Medicine

H. FOWLER RAINSFORD WATTS, M.D.
Assistant in Clinical Medicine 372 Dorchester Ave., Boston

CHARLES BALFOUR DARLING, A.B., M.D.
Assistant in Clinical Gynaecology 27 Rockville Park, Roxbury

JOHN PETER TREANOR, M.D. . . . 5 Howes St., Dorchester, Mass
Assistant in Clinical Medicine

WILLIAM HERBERT GRANT, M.D. . . . 419 Boylston St., Boston
Assistant in Clinical Gynaecology

RICHARD FROTHINGHAM O'NEIL, A.B., M.D.
416 Marlborough St., Boston
Demonstrator of Surgical Apparatus and Bandaging

ISIDORE EUGENE ROSENSTEIN REID, M.B., C.M.
Assistant Demonstrator of Anatomy 84 Boylston St., Jamaica Plain

WILLIAM GRAY ADAMS, M.D. . . . . Hyde Park
Assistant in Anatomy

THOMAS JAMES O'BRIEN, PH.G., M.D. 1470 Tremont St., Roxbury
Assistant in Clinical Medicine

JOSEPH HENRY SAUNDERS, A.B., M.D. 310 Howard St., Brookline
Assistant in Clinical Medicine

ADELAIDE OLGA CUSHING-LEARY, M.D.
Assistant in Pathology and Bacteriology Cushing Hospital, Roxbury

T. SCOTT MCLEOD, M.D. . . . . 56 Bartlett St., Roxbury
Assistant in Anatomy

WILLIS T. MIDDLETON, M.D. . . . . West Quincy
Assistant in Anatomy

ALONZO KINGMAN PAINE, M.D. . . . . 69 Gainsboro St. Boston
Prosector in Anatomy

WILLARD CHUTE PETERS, M.D. . . . . Boston City Hospital
Assistant in Clinical Surgery

FREDERICK WINSLOW STETSON, A.B., M.D.
Assistant in Clinical Medicine Columbia Road, Dorchester

ARTHUR T. LEGG, M.D. . . . . Charlesgate, Boston
Assistant in Orthopedics

Laboratory Assistants

Anatomy

L. MARY-BELLE HOLT, B.L. . . . . Portland, Me.
HORACE G. WHEATON . . . . . Cambridge
CARL R. O'BRIEN . . . . . Chelsea

Pathology and Bacteriology

EDISON W. BROWN . . . . . Dorchester
JOHN M. KELLEY . . . . . Dorchester
LEON S. A. MEDALIA . . . . . Boston

Histology

LEO T. MYLES . . . . . Cambridge
FRANKLIN WELLES . . . . . Boston
GUY M. WINSLOW . . . . . Newton

Physiology

FREEMAN A. TOWER . . . . . Sterling Junction
MARGARET E. CARLEY . . . . . Winthrop
SYDNEY C. HARDWICK . . . . . Quincy
SOLON W. PETERS . . . . . Sterling

Medical Chemistry

LUTHER G. DEARBORN, JR., A.B. . . . . Somerville
CLARK K. PETERSON . . . . . E. Boston
W. DACRE WALKER . . . . . Peabody
FRANK W. ROGERS . . . . . Dedham
CHARLES H. YOUNG . . . . . Woburn

General Chemistry

THOMAS W. MURPHY . . . . . Lawrence
ADELINE F. DUNHAM . . . . . Boston
CORNELIUS A. SULLIVAN . . . . . Everett
JOSEPH A. MEEHAN . . . . . Lowell
CUSHMAN DAY . . . . . Boston

Pharmacology

JOHN J. GIBBONS . . . . . Clinton
WILLIAM A. DUTCHER . . . . . Boston

Bursar

HERBERT T. BROWN . . . . . Tufts College

STANDING COMMITTEES OF THE MEDICAL SCHOOL

ADMINISTRATION.— The President, the Dean, the Secretary, Drs. Wheatley and Leary.

CATALOGUE.—Drs. Briggs, Bates, and Dearborn.

NOMINATIONS.—Drs. Wheatley and Arnold.

LIBRARY.—Drs. Otis, Howe, and Cushing.

COURSE OF INSTRUCTION.—Drs. Leary, Arnold, Briggs, and Washburn.

ADMISSION.—Drs. Leary, Dearborn, and Bates.

DISPENSARY.—Drs. Briggs and Arnold.

The College Dispensary Staff

DEPARTMENT OF MEDICINE

Chief-of-Staff

HORACE D. ARNOLD, M.D., *Professor of Clinical Medicine*

Associate

HOWARD S. DEARING, M.D., *Assistant Professor of Clinical Medicine*

Physicians

JOSEPH H. SAUNDERS, M.D. ANNIE S. K. PATCH, M.D.
FREDERIC W. STETSON, M.D. ISIDORE E. R. REID, M.D.
HORATIO S. CARD, M.D.

DEPARTMENT OF SURGERY

Chief-of-Staff

FREDERIC M. BRIGGS, M.D., *Professor of Clinical Surgery*

Surgeons

FRANCIS D. DONOGHUE, M.D. WILLIAM G. ADAMS, M.D.
FREDERICK W. PEARL, M.D. HAROLD W. SMITH, M.D.
WILLIAM C. PETERS, M.D.

DEPARTMENT OF GYNAECOLOGY

Chief-of-Staff

ERNEST W. CUSHING, M.D., *Professor of Gynaecology*

Associate

GEORGE W. KAAN, M.D., *Professor of Clinical Gynaecology*

Gynaecologists

EDWARD L. TWOMBLY, M.D. ELIZABETH A. RILEY, M.D.
CHARLES B. DARLING, M.D.

DEPARTMENT OF LARYNGOLOGY

Chief-of-Staff

WILLIAM E. CHENERY, M.D., *Assistant Professor of Laryngology*

Laryngologists

ALFRED A. AMADON, M.D. FREDERIC D. LYON, M.D.
GEORGE S. McPHERSON, M.D. FRANK E. HASKINS, M.D.

Pharmacist

ELBERN T. BOWERS, PH.G., M.D.

Tufts College Medical School

The Tufts College Medical School was established in Boston in 1893. Women are admitted upon the same terms as men. Since its establishment its rapid growth is believed to be without precedent in the history of American medical schools. Three times it has been found necessary to change the location of the school to provide larger laboratory facilities for the constantly increasing number of students. In 1900 it was voted by the Trustees to provide a new building for the combined Medical and Dental departments. Land was purchased upon the corners of Huntington and Rogers avenues and Courtland and Drisko streets, and ground was broken for the new medical school early in the autumn. This building is now completed and is occupied by the combined schools. It is constructed of Jonesport red granite and brick, with terra cotta trimmings. It contains nearly an acre and a half of floor space; is heated and ventilated throughout by both the direct and indirect systems, and is lighted by electricity. Modern improvements have been introduced in all departments, and no expense has been spared to make it the best arranged as well as the largest structure of its kind in New England. The building can be reached by all Huntington Avenue cars except the Cross Town and Cambridge lines.

Departments of Instruction

ANATOMY

The course in anatomy comprises, for the Freshman year, lectures, recitations, and demonstrations, illustrated by plates, models, and dissections. The relations of parts and organs in the various regions of the body are demonstrated, and their

importance in various operations is emphasized and explained. In the dissecting-room the student is required to carry on his work with neatness and precision, under the supervision of the demonstrator, thus acquiring that familiarity with the use of instruments which is essential to the practitioner. The new dissecting-room is fitted with all modern conveniences, and is under the personal supervision of the Professor of Anatomy. The dissections are made under the direction of the Demonstrator of Anatomy or his assistants, who will give all necessary aid and advice. Abundance of material is furnished students at cost.

PHYSIOLOGY

The course in physiology is given throughout the latter half of the first year. It constitutes half of the entire work required of the student during that period. The course consists of four recitations, two lectures, six hours of laboratory work, and three conferences for every student, each week, together with the preparation of a technical written paper, and extra demonstrations.

In the recitations, familiarity with the subject matter of Stewart's "Manual of Physiology," and with the Syllabus, is required. The lectures set forth the principles of general physiology, and suggest some of its relations to the allied sciences, especially anatomy. In the laboratory the student has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function. A strict practical examination may be held at the end of the year in the laboratory. The conferences give volunteers opportunity to become familiar with the literature on important interesting physiological topics, which are then presented briefly in written reports and freely discussed by the class. Record both of the attendance and of the quality of the work done in the laboratory and recitation-room will be kept, and, with the conference, will largely determine the standing of the student in the class. In addition a three-hour written examination, covering the entire work of the year, is held at the

completion of the work, besides important subsidiary written examinations, monthly.

By thus concentrating attention upon physiology during an adequate period it is hoped that at least a thorough and indispensable grounding in the functions of the normal human organism will be acquired. Advanced work in physiology will be provided for competent students, by special arrangement with the head of the department. The constant aim is to adapt the work of each student both to his needs and to his capabilities.

GENERAL CHEMISTRY

The course in general chemistry consists of descriptive chemistry and qualitative analysis, with so much of theoretical chemistry as is necessary for a proper understanding of the subject.

The classification of the carbon compounds also is taken up at considerable length, and special reference is made to those which are of interest in the study of medicine. The instruction is by lectures, recitations, and practical work by the students in the laboratory. There are five lectures, two recitations, and six or more hours of laboratory work for each student, every week. Much attention is given to qualitative analysis for the sake of the valuable training which it imparts, and the knowledge of chemistry which is incidentally gained. The importance of this knowledge is evinced by the fact that it is the only non-professional subject which is required in most medical schools. The aim is to impart such information in chemistry as is necessary to the intelligent physician. At the same time any who wish to pursue the study further than is required of every graduate may do so by special arrangement.

Certificates of satisfactory completion of courses 1, 2, and 3, in Chemistry, in the academic department of Tufts College, or of the same courses in the Summer School, will be accepted in the Medical School in place of General Chemistry. It is intended to make this course lead directly to the Medical Chemistry of the second year, and in the near future to have it include much of the preliminary work of that course.

HISTOLOGY

The work in histology covers the first half of the school year, and is both didactic and practical. The practical work in the laboratory is emphasized. Here the student comes into the most intimate relation with the elements of the body, the legitimate objects of his study. He learns to use the microscope and to manipulate sections. Being required to draw what he sees, he forms a mental picture of the objects of study which he never forgets.

The department aims to bring before the student the latest utterance of the best authorities, and to present the subject from the standpoint of the medical student. It must be obvious that histology, dealing as it does with the tissue elements of the body in their normal condition, is vitally important in the study of pathology, when it is understood that it is morbid changes in these elements which constitute pathological conditions. The student's future study of pathology is kept constantly in mind, and the teaching of the department has a direct bearing upon that end.

Embryology will be presented so far as to give the student a knowledge of the origin of the tissues in the embryo, and to furnish him with an understanding of such conditions as will aid him in the study of obstetrics. The department is furnished with microscopes, the use of which, on payment of a small fee, will be afforded to such as are unable to furnish instruments of their own.

Written exercises and recitations will form a part of the course.

MATERIA MEDICA AND THERAPEUTICS

Instruction in therapeutics consists of lectures, recitations, and laboratory exercises. Especial attention is given to the physiological action of drugs in its relation to their therapeutical application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory course is designed to familiarize the student

with all medicinal preparations and processes, and consists of exercises in which the class in sections is led to this result practically.

Prescription writing and the metric system will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

MEDICAL CHEMISTRY

Medical chemistry, in its two departments, physiological and clinical chemistry, is taught in lectures, quizzes, and practical work in the laboratory. Every week there are three lectures and three quizzes of one hour each, besides sixteen hours required in the laboratory. The students first acquire a familiarity with proteins, carbohydrates, and fats,—the bases of foodstuffs and of all animal tissue,—and then a thorough knowledge of salivary, stomachic, and pancreatic digestion. Then follows the examination of blood, milk, gastric contents, urine, bile, feces, normal and abnormal. In all this work the practical and clinical bearings which most concern a physician are kept constantly in the foreground.

PATHOLOGY

The work in pathology and bacteriology will occupy the attention of the students during the second half of the second year. The instruction in pathology will consist of lectures, recitations, demonstrations, and practical laboratory work. It will be the aim to develop in the student a thorough knowledge of the causes, course, and results of pathological processes. Daily lectures (five times a week) will be supplemented by daily recitations, based upon a syllabus covering the subjects of general pathology and special pathology.

Demonstrations of gross pathological specimens, obtained from operations and autopsies at the Boston City Hospital, Massachusetts General Hospital, and other institutions, will be held frequently, as material is obtained. The supply of fresh material is very large, and it is usually possible to illustrate all of the common disease processes and many of the rare lesions,

during the period covered by the class. This work will include active participation by the students. who will be expected to section, study, and report upon specimens. Instruction in autopsy technique will be given in the amphitheatre of the school.

The work in pathological histology will include three hour-exercises daily, five times a week. Students will mount and make drawings of sections obtained from human and experimental lesions, comprehending all of the important subjects of general and special pathology. Special attention will be paid to surgical pathology. Preserved gross specimens illustrating the lesions studied will be demonstrated in connection with the laboratory exercises.

Written recitations will be held, without notice, at irregular intervals throughout the term. The standard attained by the student in these exercises will influence his final mark on the subject. Final examinations will be held at the end of the year, three hours of written and two hours of practical work. A report on gross specimens may be included.

Microscopes will be loaned to students for a small fee.

BACTERIOLOGY

Bacteriology is taught as a companion study with pathology As infectious processes are taken up, the bacterial causes are studied in connection with the pathology of the diseases which they produce, in such a way that a comprehensive view of the cause and effect may be obtained. Attention is paid to the technical details of laboratory work. The methods of bacterial action, the elaboration of toxines, the subject of immunity, and the important bearings of asepsis, antisepsis, and disinfection are especially emphasized. Particular attention is also paid to all practical bacteriological tests used in medicine.

The bacteriological laboratory presents adequate facilities for the intelligent demonstration of this subject. In addition to the usual laboratory work, facilities are afforded students for individual work. In connection with the demonstration of gross pathological specimens, a study of bacteria present is

made, both by smear and culture. The recitations in this subject will include both oral and written exercises, and practical examinations will be held throughout the year.

The final examination will consist of two hours of written and one hour of practical work. The practical examination will consist of the examination of an unknown specimen, requiring the application of a bacteriological test of clinical value.

THEORY AND PRACTICE OF MEDICINE

The work prescribed in the department of general medicine has been carefully planned. As the studies of the second year are intended to prepare the student for the study of the theory and practice of medicine, so is this course intended to prepare for the clinical courses of the fourth year. To this end a systematic series of lectures is offered, including such general diseases as are not considered in the special courses. Two hours a week are devoted to these lectures. They comprise a detailed description of each of the diseases under consideration. The diseases are discussed upon the uniform plan of a description of the affection, its synonyms, history, cause, pathological changes, symptoms, complications, diagnosis, prognosis, prevention, and treatment. Supplementary to these lectures, a quiz-class, also two hours a week, is held. By such thorough and systematic study of the diseases he is to meet in the clinical work of the fourth year, the student is prepared to appreciate in the fullest degree the varying phenomena of daily practice.

SURGERY

Instruction in surgery consists of two lectures weekly, on the general principles and practice of surgery, one recitation every week from the text-book, and two one-hour examinations, in addition to the final examination, at intervals during the year. Students of the Junior class, in small sections, attend the various surgical clinics of the school, preparatory to the regular clinical work of the Senior year. They are expected to attend the operations at the Boston City Hospital every Friday morning, the clinical lectures at the Boston Dispensary every Thursday morning, and are invited to be present at the clinical conferences of the Sen-

ior class, but are not allowed to take active part in the discussions. All students who have not already taken the course in bandaging and apparatus must make arrangements with the demonstrator to take this course before the termination of their Junior year. Students of the Junior class who wish appointments as dressers in the surgical clinics of the school are requested to make written application at the commencement of the school year. These positions are of from four to twelve weeks' duration, and are of great practical value.

OBSTETRICS

Instruction in obstetrics consists of lectures, recitations, conferences, and clinical teaching. Lectures are illustrated by plates and the use of the manikin. Each student is required to care for at least two cases (clinical instruction being given with one of these), attending them throughout convalescence, and handing in a written report. Some of these reports will be read before the class, and subjected to discussion and criticism by class and instructor.

PULMONARY DISEASES AND CLIMATOLOGY

A chair of pulmonary diseases and climatology has been established, and Dr. Edward O. Otis, Physician to the Free Home for Consumptives and the department for Diseases of the Lungs of the Boston Dispensary, formerly President of the American Climatological Association, has been elected as the head of this department. Medical climatology will receive special attention in relation to the climatic treatment of tuberculosis. The methods of sanatorium treatment will be discussed, and one or more sanatoriums visited during the year.

A limited number of students of the fourth year who desire to assist at the clinic of the Boston Dispensary for diseases of the lungs will have opportunity to do so, and should apply to Dr. Otis. In this department special attention is devoted to pulmonary tuberculosis, concerning which instruction is given, both by didactic and clinical lectures, to the students of the third and fourth years. Special clinical instruction, with opportunities for the physical examinations of patients, will be given

to the students of the third and fourth classes, in small sections, at the clinic for pulmonary diseases in connection with the Boston Dispensary, and at the Free Home for Consumptives. The detection, treatment, and prevention of pulmonary tuberculosis will be thoroughly studied in this class.

GYNAECOLOGY

Instruction in gynaecology is given both by lectures and clinical teaching. Lectures are given to the third year students twice a week during the second term. Once a week a quiz is held on the lectures.

DISEASES OF CHILDREN

Instruction in the diseases of children consists of clinics, lectures, clinical conferences, quizzes, and visits to sick children at their homes. The clinical advantages offered to students in this department are great; examples of nearly all the affections of infancy and childhood are shown to the students, including such rare diseases as are seldom seen outside the clinics of a large city. A course of didactic and clinical lectures, including the anatomy and hygiene of infancy and children, is given, and also special clinical instruction in the auscultation and percussion of children, and in the contagious diseases. The members of the class are received in small sections.

HYGIENE

Freshmen are taught elementary hygiene, and the benefits derived from wholesome associations, during the first half of the year.

The third year, the course in hygiene includes public sanitation. Water supplies, sewerage systems, house and school construction, municipal sanitation, industrial occupations, preventable diseases, vital statistics, and sanitary codes are among the subjects of the lectures. During the second half of the year, Professor Austin, in connection with the work in hygiene, will instruct the class in the chemical analysis of air, water, and foods, chiefly by means of demonstration.

One of the objects of this study is to supply qualified candidates for Public Health Offices.

CLINICAL MEDICINE

The aim of the work in clinical medicine is to give the student a practical acquaintance with disease.

Normal auscultation and percussion will be taught in the latter part of the second year. During the third year the work in auscultation and percussion will be extended to the study of abnormal conditions, and clinical opportunities will be afforded the student for gaining experience in the physical examination of patients. Assistant Professor Dearing will give a lecture twice a week in medical diagnosis. A course in haematology, including lectures and practical work, will be given by Dr. Strong.

During the fourth-year there will be four regular exercises weekly, besides numerous clinics. Two clinical lectures are given weekly in the amphitheatre of the Boston City Hospital, one by Professor Arnold and one by Assistant Professor Ames. Patients from the hospital wards will be shown, and the diagnosis and treatment of these cases will be discussed. Third-year students will be admitted to this exercise.

The third weekly exercise will be held at the school by Professor Arnold. These exercises will consist partly of didactic lectures supplementing the clinical lectures at the hospital, and partly of the discussion of clinical cases, in which both instructor and students take part. A number of these lectures will be devoted to the consideration of life insurance and other aspects of what may be termed mercantile medicine. Assistant Professor Dearing will also lecture on Military Medicine, as part of this course.

The fourth exercise will be a clinical conference, one hour a week, under the charge of Assistant Professor Ames. At this conference reports of cases written by the fourth-year students will be read, discussed, and criticised by the board of instruction and by the students. The cases to be reported will be assigned to the students from the various clinics. Third-year students

will also be admitted to the clinical conferences. As part of this course Dr. Chase will give a series of lectures on Diseases of the Stomach.

Clinical exercises are held at the following institutions: Boston City Hospital, Carney Hospital, St. Elizabeth's Hospital, Boston Dispensary, and the Tufts College Medical School Dispensary. The clinical exercises given by Professor Otis and his assistants in connection with pulmonary diseases constitute an important part of the instruction in clinical medicine. This work comes in the third and fourth years, with clinics at the Boston Dispensary and the Free Home for Consumptives.

Another important feature of the instruction consists of visits made by the students with the district physicians of the Boston Dispensary. Here the students see cases of sickness in the home. They are not only instructed in the care of patients under these conditions, but have opportunities for following cases through every aspect of the disease. They will be required to make a special study of certain of these cases, and their written reports furnish much of the material for the clinical conferences.

Examinations are held as follows:—on normal auscultation and percussion at the end of the second year; two one-hour examinations in the third year, one on pulmonary diseases and one on medical diagnosis (including haematology); and a final three-hour examination at the end of the fourth year. The marks in clinical medicine will be based on the practical work throughout the course and on the reports of cases, as well as on the written examinations.

CLINICAL AND OPERATIVE SURGERY

The work in clinical and operative surgery consists of lectures, clinical work, conferences, and operative work on the cadaver. There is one clinical lecture a week throughout the school year, at which cases are presented, described, examined, and fully discussed. These lectures are arranged to give a systematic course in the surgery of special organs and portions of the body, and are demonstrated from the actual case, thus continu-

ing and completing the surgical instruction of the third year. Students of the fourth-year class attend in sections the surgical clinics at the Boston Dispensary, at the Carney Hospital, at St. Elizabeth's Hospital, and at the School Dispensary, from October 1 to May 15. At these exercises students make personal examination and report to the instructor, in this way becoming practically familiar with the methods of making diagnosis from personal contact with the patient. Students of the class also have numerous opportunities of administering ether, of assisting at operations, and, with certain limitations, of performing minor operations.

Each student is assigned at least two clinical cases for conference. Each of these cases must be carefully studied and written out in detail, giving the diagnosis, prognosis, and treatment, and a thorough discussion of all points connected with the particular case. The most valuable of these papers are selected, and after November 1 one conference is held each week, at which two papers are read and then freely discussed by the whole class.

The work in operative surgery consists of demonstrations on the cadaver, by the surgical staff, of all the important operations. Following these demonstrations the class is divided into small sections, and each student learns operative technique (ligation of arteries, amputations, and so on) by personal work, under the surveillance of the staff. It is intended that this course shall commence in November and continue daily until completed; but the continuous duration of the work is necessarily subject to the supply of available material.

CLINICAL GYNAECOLOGY

The abundant material at the Free Hospital for Women is utilized for the instruction of students of the fourth-year class. The almost continuous daily clinics (morning, afternoon, and evening) of the out-patient department provide an excellent course in methods of diagnosis and treatment of the diseases of women, superior to any other in New England. Each student receives nearly twenty hours of personal instruction at the

clinics. In addition, the operations at this hospital, two days in each week, demonstrate all forms of major pelvic surgery. Weekly conferences are held during the second half-year, wherein papers are read by the students and discussed.

NEUROLOGY

The department of neurology has been entirely reorganized under the direction of Dr. Morton Prince. Like other special departments of the fourth year, the course embraces in its scope a required and an elective branch. The required course consists of clinical and didactic lectures given by Dr. Prince at the Boston City Hospital, once a week for twelve or fifteen weeks. This course is supplemented by lectures by Dr. Hoch, on the anatomy, physiology, and pathology of the nervous system, also one hour a week for twelve or fifteen weeks. The elective work, in addition to the above, consists of clinical instruction, one or two hours a week, by Dr. Thomas. The student will have an opportunity to examine and study the patient for himself, thus becoming experienced in the methods of examination, and acquainted with nervous diseases as present in the subject. It will be the aim of the department to make this instruction as practical as possible.

MENTAL DISEASES

Instruction in mental diseases will be afforded by a course comprising didactic and clinical lectures, to be given weekly from January to the middle of May. Ten or more clinics will be held at the Boston Insane Hospital, where a large number of patients are received annually. Two clinics will be given also at the Massachusetts School for Feeble-Minded, at Waverly. It will be the aim of this course to allow the students to become familiar with the prevalent forms of mental trouble, the early symptoms of insanity, with the methods of commitment. Especial attention will be given mental defects in children.

Students are urged to prepare themselves for this course by taking the optional course offered in normal medical psychology.

LARYNGOLOGY

Instruction in the diseases of the nose and throat is both didactic and clinical. A systematic course of lectures is given to the third-year students in the amphitheatre of the school during the first half year. These lectures are illustrated by colored diagrams, models, pathological specimens, and the exhibition of instruments.

Clinical instruction in laryngoscopy and rhinoscopy is given to small sections of the class in the clinic of the School Dispensary. This work is required.

An elective course, mainly practical, is given to the fourth-year students during the last half-year. Special attention is given to the technique of instrumentation, also to general diagnosis and treatment. By the actual examination of cases the student is made familiar with the diseases that the family physician is expected to care for. Opportunity is given also to see the more important operations of the nose and throat. Practical lectures will be given at the school. The class will visit, in sections, the clinics of the School Dispensary, and also the Boston Dispensary.

OPHTHALMOLOGY

The course in ophthalmology will be of the most practical character possible, being designed to give the general practitioner such knowledge of the subject as is most essential to his practice. The lectures will be given twice a week, the first half of the school year. For clinical work the class will be divided into small sections, preparatory to instruction at the Massachusetts Charitable Eye and Ear Infirmary, the Carney Hospital, and the School Dispensary. The fourth-year elective students will be given personal instruction by all members of the department throughout the school year.

ABDOMINAL SURGERY

Instruction is given in abdominal surgery, including appendicitis, hernia, and the major operations on the female pelvic organs, by two lectures and one quiz weekly to fourth-year stu-

dents during the first term, and by demonstrations on the cadaver, clinical conferences, and attendance of subdivisions of the class at operations.

LEGAL MEDICINE

The instruction in legal medicine consists of one lecture each week for twelve weeks, and will include all the subjects which are usually embraced under the head of medical jurisprudence. Instruction will be given in the making of medico-legal autopsies, with as many practical demonstrations as possible. The duty of a physician to the Commonwealth, and his rights both as a medical expert and as an ordinary witness, will be explained.

ORTHOPEDIC SURGERY

The work in orthopedic surgery consists of one lecture, four clinics, and one quiz each week of the first half-year, and of two exercises a week at the Carney Hospital (the class being divided into two sections), during the second half-year. One of the clinics of the first half-year is in special orthopedic pathology. The work of the second half-year consists of practical exercises in diagnosis and treatment in the out-patient department, and of ward-visits, with opportunity to see the operative work, especially the orthopedic surgery of the adult.

MERCANTILE AND MILITARY MEDICINE

The lectures in mercantile and military medicine are intended to acquaint the student with the duties peculiar to the army and the navy surgeon, and the life-insurance examiner. Instruction is given in the methods of physical examination, the preparation of certificates, and other allied subjects. The instruction is given by Professor Arnold and Assistant Professor Dearing, in connection with the department of clinical medicine.

OTOLOGY

The instruction in otology consists of lectures and clinics at the Massachusetts Charitable Eye and Ear Infirmary, and, if desirable, at Carney Hospital. An elective course consists of clinical work at the same institutions.

DISEASES OF THE RECTUM

The course in diseases of the rectum will consist of twelve weekly lectures during the first half-year, at the school, and clinical instruction three mornings of the week, at the Boston Dispensary. Each student will have ample opportunity to examine and in suitable cases, to apply, treatment. Especial attention will be paid to so-called "office treatment" of this class of diseases. Instruction will be given by Dr. Frank P. Williams.

DERMATOLOGY

The instruction in dermatology will consist of weekly lectures, from January to March. Besides, from January to June, there will be three clinics weekly at the Boston City Hospital, where cases of skin diseases will be shown to the class, with an opportunity for each student to examine the cases personally.

GENITO-URINARY DISEASES

The various diseases of the genito-urinary system will be considered and illustrated by cases, as far as practicable.

ELECTRO-THERAPEUTICS

The course in electro-therapeutics will consist of twelve lectures, with occasional quizzes. It will include a brief review of the principles of electro-physics, the nature, methods of production and physiological action of the various forms of electrical energy, together with a brief discussion of their therapeutic uses and limitations. A sharp distinction will be drawn between effects attributable to suggestion and those really due to electrical action. A clinic has been established where the student may observe the technique of the X-ray, the ultra-violet ray, and the high-frequency currents. Several evening lectures of a popular and experimental nature will be given on "The Phenomena of the Electrical Discharge, and its relation to the X-Ray and Radio-Activity." These lectures, while given primarily for the class in electro-therapeutics, will be open to anyone interested in the subject.

NORMAL MEDICAL PSYCHOLOGY

A course of lectures in normal medical psychology is given to the fourth-year class, weekly, during the first half-year. Its aim is to discuss in their more general relations the principles of normal mental action, and to describe the mind as one of the two aspects or parts of every individual, Besides its own important value as science, (and one whose applications are seen in every hour of life), psychology is the indispensable basis of an understanding of the complex diseases of the mind and of the nervous system, just as physiology underlies practical medicine.

In addition to this, however, the course will discuss certain special topics of great practical importance to the medical practitioner: such topics for example as suggestability, temperament, mood, the numerous habits, sexual mental differences, will-power, the emotions, pain and pleasure. Knowledge of subjects such as these prepares the student better to understand his patient as an individual, and so better to treat his disease. The course is given by Assistant Professor Dearborn.

Requirements

FOR ADMISSION TO FIRST-YEAR CLASS

Candidates for admission to this school, except as hereafter stated, must pass a written entrance examination in the following studies:—

(*a*) English: a composition of two hundred words upon some subject of general interest; the same to be criticised in relation to expression of thought, construction of sentences, punctuation, spelling, and handwriting. The subjects for this examination in 1903 and 1904 will be chosen from the following:—

(1) Shakespeare's Merchant of Venice; (2) Thackeray's Henry Esmond; (3) Burke's Speech on Conciliation with America; (4) Scott's Ivanhoe.

Every candidate is expected to have read intelligently all the books prescribed.

(*b*) Algebra: such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

(*c*) Plane Geometry.

(*d*) Physics: such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

(*e*) Latin: a sight translation of such elementary Latin as is usually included in one year of study; as, for example, the first fifteen chapters of Caesar's Commentaries, and the translation into Latin of easy English sentences involving the same vocabulary.

Beginning with the session of 1905–1906, a knowledge of chemistry will be required for entrance.

Students applying for admission to this school are advised to prepare themselves in Elementary French and German, although at the present time no entrance examination in these branches is required.

Students who fail in one or more of these subjects may be admitted, subject to condition; but no student will be allowed to commence his second year whose entrance conditions are not removed.

EXCEPTIONS.—Graduates of approved high and preparatory schools will be admitted on presentation of approved entrance certificates; also students holding certificates of entrance to a college or university, those holding the State of New York Regents' certificate, and graduates of a college or university will be admitted without entrance examination. Students who intend entering the school on credentials must bring them. A certificate of graduation attested by a town clerk will be accepted in lieu of a diploma.

Entrance examinations will be held on Monday, June 13, 1904, and on Saturday, Oct. 1, 1904, at 10 A.M.

Candidates who intend taking these examinations are re-

quired to notify the Secretary one week before date of examinations.

Advanced Standing

Students of Tufts College who have taken the Medical Preparatory Course, which contains equivalents of the first year of work in the Medical School, and who are registered as having fulfilled the requirements in anatomy, physiology, general chemistry, and histology, may be admitted to the second-year class.

No credit will be given for examinations passed at other schools.

Students from other schools who are candidates for advanced standing must present themselves for examination on Monday, Sept. 26, 1904.

Promotion

Students who have passed a majority of the first-year examinations, and who have removed all entrance conditions, are admitted to the second-year class. Students are required, however, to have qualified in General Chemistry before they are eligible to the Medical Chemistry of the second year.

The Third-Year Class

Students who have passed all the first-year examinations, and a majority of the second-year examinations, may be admitted to the third-year class.

The Fourth-Year Class

Students who have passed all the examinations of the first and the second year, and a majority of the subjects of the third year, and graduates of other approved medical schools, may be admitted to the fourth-year class.

Students will be registered in the catalogue in accordance with these requirements.

GRADUATION

For the Degree of M.D.

Candidates for the degree of Doctor of Medicine must have fulfilled the following requirements:

1. They must furnish certificates that they are twenty-one years of age and of good moral character.

2. They must have attended four full courses of medical lectures at some accredited medical college, the last of which shall have been at this school, and no two courses in the same twelve months.

3. They must have passed all the required examinations.

4. They must have attended two cases of obstetrics.

5. They must have satisfactorily dissected one half of the body, under the direction of a demonstrator of anatomy.

6. They must have paid all fees before the final examinations.

The final marks are derived from work in recitations, laboratories, clinics, and dissecting room, and from written examinations.

The Faculty reserve the right to change these requirements without further notice.

HONORS

Students who have attended four full courses of lectures at this school, and have obtained an average of 90 per cent. in their examinations, shall be eligible to "*summa cum laude*"; and students who have obtained an average of 80 per cent. shall be eligible to "*cum laude*," in connection with the degree received.

OUTLINE OF THE COURSE

First Year

Descriptive Anatomy.—Lectures, demonstrations, recitations, and dissecting. *Sixteen hours a week during the first semester.*

General Chemistry.—Lectures, and required laboratory work. *Thirteen hours a week during the second semester.*

Physiology.—Lectures, demonstrations, conferences, recitations, and experimental work in the laboratory. *Twelve hours a week during the second semester.*

Histology.—Lectures, demonstrations, and required laboratory work. *Ten hours a week during the first semester.*

Hygiene.—Lectures on Elementary Hygiene, *ten hours.*

Final examinations upon these subjects occur at the close of the first and the second semester, respectively, of the first year.

Second Year

Materia Medica and Therapeutics.—Lectures and recitations. *Four hours a week during the first semester.*

Medical Chemistry and Toxicology.—Lectures and required laboratory work. *Twelve hours a week during the first semester.*

Pathology.—Lectures, demonstrations, and required laboratory work. *Twelve hours a week during the second semester.*

Bacteriology.—Lectures and required laboratory work. *Five hours a week during the second semester.*

Normal Auscultation and Percussion.—Lectures and exercises during second semester.

Final examinations upon these subjects are required at the close of the first and the second semester, respectively, of the second year.

Bandaging and Apparatus.

Third Year

Theory and Practice of Medicine.—Lectures, and recitations. *Four hours a week.*

Surgery.—Lectures and recitations. *Three hours a week.*

Obstetrics, including attendance upon two cases of labor. Lectures and recitations. *Five hours a week.*

Ophthalmology.—*Two hours a week.*

Gynaecology.—Lectures and recitations. *Three hours a week.*

Laryngology.—*Two hours a week.*

Pediatrics.—*Six hours a week.*

Hygiene.—*One hour a week.*

Medical Diagnosis.—*Two hours a week.*

Final examinations upon these subjects are required at the close of the third year. Third-year students who have creditably passed all their previous examinations will be allowed to take some of the fourth-year studies, subject to the approval of the Faculty.

Fourth Year

Clinical Medicine, Clinical Surgery, Abdominal Surgery, Clinical Gynaecology, Otology, Neurology, Dermatology, Diseases of the Rectum, Genito-Urinary Diseases, Orthopedic Surgery, Mental Diseases, Electro-Therapeutics, and Legal Medicine.

The final examinations of the fourth year will consist of three-hour examinations upon Clinical Medicine and Clinical Surgery, and two electives to be chosen by the student from the above list, to which are added **Ophthalmology** and **Laryngology.** Electro-Therapeutics and Legal Medicine cannot be taken as electives.

There will be a one-hour examination in all the above subjects, except the four in which three-hour examinations are held.

EXAMINATIONS

There are two periods of examination each year in the college building. They are in writing, and are held during the week preceding the opening of the regular course of lectures in the fall, and at the close of the course in the spring.

The fall examinations are for

(*a*) Students commencing the study of medicine.

(*b*) Students applying for advanced standing.

(*c*) Students who failed in the spring.

The spring examinations are for promotion and graduation.

All students who intend taking any of the fall examinations must register their names with the Secretary, on or before September 1, 1904. Students intending to take any of the spring examinations must register their names with the Secretary, on or before May 1, 1904.

Students who have failed twice in their examination upon any subject will not be admitted to a third examination without the payment of an extra examination-fee of five dollars.

TEXT-BOOKS

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy.—Gray, Quain, Morris, Holden, Haynes' Dissector.

Physiology.—Syllabus (for laboratory directions), Stewart's Manual, American Text-book, Foster, Kirke, Verworn, Schäfer, Porter.

General Chemistry.—Simons's Manual of Chemistry, Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis.

Histology.—Syllabus, Böhm and Davidoff, Stohr.

Medical Chemistry.—Austin and Coriat's Laboratory Manual of Physiological Chemistry, Simon's Physiological Chemistry, Kobert's Practical Toxicology.

Collateral Reading.—Hammarsten's Physiological Chemistry, Lewin's Toxicologie.

Materia Medica and Therapeutics.—Bartholow, Hare, Wood, Cushny, United States Dispensatory, Gerrish's Prescription Writing.

Pathology.—Syllabus, Stengel, Ziegler, Coplin, Mallory and Wright's Technique, Durck's Pathological Histology, Cohnheim, Green, Warren.

Bacteriology.—Syllabus, Muir and Richie, Park, Levy and Klemperer, McFarland, Abbott, Lehmann and Neumann, Sternberg.

Obstetrics.—Hirst, Reynolds, Jewett, American Text-book.

Gynaecology.—Greig-Smith, Byford, Dudley, Kelly, Reed.

Clinical Gynaecology.—Davenport, Dudley, Greig-Smith.

Surgery.—International Text-book, Wharton and Curtis, Roberts, Roswell Park, American Text-book, Stimson on Fractures and Dislocations, Scudder on Treatment of Fractures, Da Costa.

Clinical and Operative Surgery.—International Text-book, Roswell Park, American Text-book, Wharton and Curtis, Roberts, Bryant's Opera, tive Surgery, Zuckerkandyl's Operative Surgery, Da Costa.

Practice of Medicine.—Osler, Tyson, Thompson, Strümpell, Eichhorst-Ander's Practice of Medicine.

Dermatology.—Diseases of the Skin by Hyde and Montgomery, Duhring, Stelwagon, Crocker, Kaposi, Besmer.

Hygiene.—Bergey, Principles of Hygiene; Egbert's Hygiene and Sanitation.

Clinical Medicine.—Osler's Practice of Medicine, Wood and Fitz's Practice, Musser's Medical Diagnosis, Tyson's Physical Diagnosis.

Neurology.—Church and Peterson, Oppenheim, Gower, Dana.

Mental Diseases.—Chapin, Cloustin, Peterson, Lewis, Dictionary of Psychological Medicine.

Pediatrics.—Holt's Diseases of Infancy and Childhood, Koplik's Diseases of Infancy and Childhood, Thompson's Clinical Examination and Treatment of Sick Children.

Laryngology.—Shurley, Coakley, Kyle, Knight.

Diseases of the Rectum.—Kelsey's last edition; Ball, last edition; Tuttle, Gant, second edition.

Orthopedics.—Bradford and Lovett, last edition.

Otology.—Buck, Politzer and Bennett's System of Diseases of the Ear, Throat, and Nose.

Ophthalmology.—De Schweinitz, Nettleship, Noyes.

Medical Dictionary.—Gould, Dunglison.

General Information

CLINICAL ADVANTAGES

Boston, as the largest city in New England, offers unusual facilities to the student of medicine. The amphitheatres of the Boston City Hospital, the Massachusetts General Hospital, the Massachusetts Charitable Eye and Ear Infirmary, are open to students, and opportunity is thus afforded for witnessing the more extensive surgical operations.

Clinics are held at the Boston City Hospital, the Massachusetts Charitable Eye and Ear Infirmary, the Boston Dispensary, the Carney Hospital, the Tremont Dispensary, the Cambridge Hospital, the Free Home for Consumptives, the Free Hospital for Women, the Women's Charity Hospital, St. Mary's, the Good Samaritan, and the Dispensary of the Medical School, in which over eight thousand visits were made in the year 1903-1904.

LIBRARIES

The students have free access to the library of the school, to the library of Tufts College, and, under certain restrictions, to the Boston Medical Library and to the Boston Public Library. The Boston Public Library contains a collection of more than fifteen thousand books upon medical subjects.

SESSIONS OF THE SCHOOL

The annual course of lectures begins on the first Tuesday in October of each year, and continues until the last Wednesday in May.

The annual course of lectures for 1904-1905 will commence Tuesday, October 4, 1904.

VACATIONS

There are no exercises at the school for three days at Thanksgiving, during the weeks of Christmas and Easter, nor upon Washington's Birthday, Patriots' Day, and Memorial Day.

Summer Courses

The following laboratory subjects are offered during the summer months:—

PHYSIOLOGY

A course in Physiology will be given during the months of June and July. While the work will consist chiefly of laboratory exercises, it will also include a number of lectures and recitations adequate to the outlines and basal principles of physiology. The fee for this class will be twenty dollars.

MEDICAL CHEMISTRY

A summer class in Medical Chemistry is conducted by Dr. Thorpe. The work consists of the entire laboratory part of the regular winter work. The class is open to all, but is particularly designed to give the first-year students of the previous winter an opportunity to do advanced work. They are permitted to take the laboratory part of the examination in the following autumn, and the written part in the next following spring, after attending the winter's lectures and recitations. The work begins on the first Monday following the 5th of June, and continues eight weeks. The fee is twenty-five dollars.

HISTOLOGY

A summer course in Histology will be given under the direction of Professor Bates. Particulars as to the scope of this work, and the fee, may be learned upon application to Dr. Bates.

EXPENSES

First Year

Matriculation	$ 5.00
Tuition	120.00
Dissecting	At cost

Second Year

Matriculation	$ 5.00
Tuition	120.00
Dissecting	At cost.

Third Year

Matriculation	$ 5.00
Tuition	120.00

Fourth Year

Matriculation	$ 5.00
Tuition	90.00
Graduation fee	30.00
Postgraduate fee for graduates of other schools	120.00
Single course	30.00
Postgraduate fee for graduates of this school	60.00
Single course	20.00

All fees are due and must be paid before November 1st. Fees are not returnable.

No student will be allowed to enter any of the laboratories until the matriculation fee and at least one-half of the tuition is paid, and after November 1 admittance to lectures will be allowed only upon presentation of a General Lecture Ticket, which will be issued by the Bursar when the tuition is paid in full.

The graduation fee is payable on or before the first day of May, and no student will be allowed to take any of the final examinations until the Bursar certifies that all fees and charges of every kind are settled.

The Bursar of the College will be at the School Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from October 1 to June 1.

There are no scholarships connected with the School.

Students will be charged the fee of the class in which they are catalogued.

The expenses of living in Boston vary according to the habits and desires of students, and need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained near the school at from $4 to $7 a week. Near the school building are several excellent boarding places charging moderate prices. Students will not be allowed to occupy rooms in the city not approved by the Faculty.

STANDING AND CERTIFICATES

Graduates of other regular medical schools in good standing may receive the degree of this school, after attending one course of lectures and passing the examinations of the four years. It is understood that a course of lectures requires actual presence at a majority of the exercises of the session.

Students who do not wish a degree will be received for any portion of the course. Any student may obtain a certificate of work during his period of connection with the school.

All students joining the school for the first time must furnish the Secretary with the application blank properly filled. *All students must fill out and deposit a registration blank before October 15.*

Requests for the annual Announcement, and all other communications relating to the business of the school, should be addressed to CHARLES P. THAYER, A.M., M.D., Secretary, Tufts College Medical School, Boston, Mass.

Beginning with the College year, 1904-5, the total charge for all who enter the School will be one hundred and fifty dollars a year.

THE DENTAL SCHOOL

Faculty of the Dental School*

ELMER HEWITT CAPEN, A.M., D.D., LL.D. . . 8 Professors Row
PRESIDENT, *and Professor of Moral Philosophy and Political Economy*

HAROLD WILLIAMS, A.B., M.D. . . . . 528 Beacon St., Boston
DEAN, *and Professor of the Theory and Practice of Medicine*

CHARLES PAINE THAYER, A.M., M.D.
Tufts College Medical School
SECRETARY, *and Professor of General, Descriptive, and Applied Anatomy*

HENRY JABEZ BARNES, M.D. . . . . 429 Beacon St., Boston
Professor of Hygiene

CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree
Professor of General Chemistry

SAMUEL AUGUSTUS HOPKINS, M.D., D.D.S.
235 Marlborough St., Boston
Professor of the Theory and Practice of Dentistry

EDWARD WALTER BRANIGAN, D.D.S.
Professor of Clinical Dentistry 2 Commonwealth Ave., Boston

FRANK GEORGE WHEATLEY, A.M., M.D. . . . . North Abington
Professor of Materia Medica and Therapeutics

JOSEPH KING KNIGHT, D.D.S. . . . . Hyde Park
Professor of Prosthodontia

GEORGE ANDREW BATES, D.D.S. . . . . Auburndale
Professor of Histology

FREDERICK MELANCTHON BRIGGS, A.B., M.D.
Professor of Oral Surgery 31 Massachusetts Ave., Boston

FREDERICK MORTIMER HEMENWAY, D.D.S.
Professor of Prosthetic Dentistry 88 Boylston St., Boston

TIMOTHY LEARY, M.D. . . . . 20 Sunset St., Roxbury
Professor of Pathology and Bacteriology

* With the exception of the President, the Dean, and the Secretary, the members of the Faculty are arranged in groups; Professors, Assistant Professors, Demonstrators, Instructors, and Assistants. Within each group, the order is that of academic seniority.

GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D.
Assistant Professor of Physiology 150 St. Botolph St., Boston

BYRON HOWARD STROUT, D.D.S. . . . . Taunton
Assistant Professor of Operative Technics and Instructor in Anaesthesia

EUGENE THAYER, A.B., M.D. . . . 2683 Washington St., Roxbury
Demonstrator of Anatomy

OTHER INSTRUCTORS

EDGAR OSGOOD KINSMAN, D.D.S. . . 15 Brattle Sq., Cambridge
Instructor in Clinical Dentistry

GEORGE LYLE MARSHALL, D.D.S. . . . . 5 Bow St., Somerville
Instructor in Prosthetic Dentistry

FRED CARVILL MERRILL, D.D.S. . . . . Wollaston
Instructor in Prosthetic Dentistry

WILLIAM RICE, D.D.S. . . . . 845 Boylston St., Boston
Instructor in Clinical Dentistry

WILLIAM PRESTON HOUSTON, D.D.S. . 419 Boylston St., Boston
Instructor in Clinical Dentistry

HENRY HILDRETH PIPER, D.D.S. . . . . Winter Hill, Somerville
Instructor in Clinical Dentistry

JOHN WOOD FORBES, D.D.S. . . . . 419 Boylston St., Boston
Instructor in Clinical Dentistry

CHARLES DAVISON KNOWLTON, M.D. 574 Warren St., Roxbury
Instructor in Pathology and Bacteriology

BURLEIGH CHILDS GILBERT, D.D.S. . . . . Stoneham
Instructor in Clinical Dentistry

JOHN INNES FRENCH, M.D. . . . . 2A Park St., Boston
Instructor in Materia Medica and Therapeutics

ERVIN ARTHUR JOHNSON, D.D.S. . . . 176 Federal St., Boston
Instructor in Clinical Dentistry

FREDERICK BOOTH STEVENS, D.D.S. . . Everett Sq., Hyde Park
Instructor in Clinical Dentistry

WALTER FORSYTHE WINCHESTER, D.D.S.
Instructor in Prosthetic Dentistry 372 Bolyston St., Boston

WILLIAM M. FLYNN, D.D.S. . . . . 474A Broadway, So. Boston
Instructor in Clinical Dentistry

WALTER IRVING BRIGHAM, D.D.S. . . . . South Framingham
Lecturer on Operative Dentistry

KNUT JOSEPH LUTTROPP, D.D.S. . . . 419 Boylston St., Boston
Demonstrator in Operative Dentistry

ISIDORE EUGENE ROSENSTEIN REID, M.D., C.M.
Assistant Demonstrator of Anatomy 84 Boylston St., Jamaica Plain

FREDERICK WARREN PEARL, A.B., M.D.
Hotel Vendome, Commonwealth Ave., Boston
Assistant Demonstrator of Anatomy

ADELAIDE OLGA CUSHING-LEARY, M.D.
Assistant in Pathology and Bacteriology Cushing Hospital, Roxbury

WILLIAM GRAY ADAMS, M.D. . . . . Hyde Park
Assistant in Anatomy

WILLIS T. MIDDLETON, M.D. . . . . W. Quincy
Assistant in Anatomy

ALONZO KINGMAN PAINE, M.D. . . . . St. Elizabeth's Hospital
Prosector in Anatomy

LABORATORY ASSISTANTS

Anatomy

L. MARY-BELLE HOLT, B.L. . . . . Portland, Me.
HORACE G. WHEATON . . . . . Cambridge
CARL R. O'BRIEN . . . . . Chelsea

Physiology

FREEMAN A. TOWER . . . . . Sterling Junction
MARGARET E. CARLEY . . . . . Winthrop
SYDNEY C. HARDWICK . . . . . Quincy
SOLON W. PETERS . . . . . Sterling

General Chemistry

THOMAS W. MURPHY . . . . . Lawrence
ADELINE F. DUNHAM . . . . . Boston
CORNELIUS A. SULLIVAN . . . . . Everett
JOSEPH A. MEEHAN . . . . . Lowell
CUSHMAN DAY . . . . . Boston

Histology

LEO T. MYLES . . . . . Cambridge
FRANKLIN WELLES . . . . . Boston
GUY M. WINSLOW . . . . . Newton

Pathology and Bacteriology

EDISON W. BROWN . . . . . Dorchester
JOHN M. KELLEY . . . . . Dorchester
LEON S. MEDALIA . . . . . Boston

Pharmacology

JOHN J. GIBBONS, JR. . . . . Clinton
WILLIAM A. DUTCHER . . . . . Boston

OTHER OFFICERS

HERBERT T. BROWN . . . . . Tufts College
Bursar

MARY WRIGHT RICHARDSON
Clerk in Infirmary

SARAH ELIZABETH MILLER
Clerk in the Prosthetic Department

FRANCES WILDER
Matron in the Operating-Room

STANDING COMMITTEES OF THE DENTAL SCHOOL

ADMINISTRATION.—The President, Drs. Branigan and Bates.

ADMISSION.—Drs. Leary, Bates and Dearborn.

NOMINATIONS.—Drs. Hopkins and Barnes.

LIBRARY.—Drs. Knight and Bates.

INSTRUCTION.—Drs. Knight, Hopkins, Hemenway, and Bates.

CATALOGUE.—Drs. Bates and Dearborn.

The Dean and the Secretary are members of all the above committees, *ex officiis*.

Tufts College Dental School

The Dental School, formerly the Boston Dental College, became an incorporate part of Tufts College in 1899, under a special act of the legislature. It was incorporated under its former name in 1868, and is a firmly-established dental school of thirty years' standing, with a large and distinguished body of alumni. Its transfer to Tufts College was in consequence of the new anatomical laws of the State, and because it was felt by its former board of trustees that the advance in dental education rendered it desirable that the more purely scientific portion of its curriculum should be pursued in connection with a medical school.

The course of instruction in this institution embraces four academic years of eight months each. The studies of the first year, and a portion of those of the second year, are identical with those of the Medical School. Instruction is given by means of lectures, demonstrations, laboratory work, and recitations, in anatomy, physiology, histology, chemistry, *materia medica*, pathology, therapeutics, bacteriology, principles of surgery, theory and practice of dentistry, oral surgery, and in operative, clinical, and prosthetic dentistry, orthodontia, and dental technics.

The infirmary, under the personal direction of the Professor of Clinical Dentistry, assisted by a corps of demonstrators, is open daily through the year, except during a part of June, the whole of July and August, and a part of September. In the abundance and variety of its clinical material, it furnishes an unsurpassed opportunity for the study of oral surgery and of dentistry in all its branches.

The Laboratory of the Prosthetic Department is provided with perfect facilities for every variety of dental work. Every student is required before graduation to present satisfactory

specimens of the different forms of mechanical work made by himself in the laboratory of the school, and under the supervision of the Professor of Prosthetic Dentistry.

The aim of this institution has always been to give its students such a training as will not only insure to them the knowledge necessary to equip them for the practical part of the dentist's work, but also inspire in them a respect for the dignity of the profession which they seek to enter.

It is believed that the dentist is not over-educated who is possessed of a working knowledge of the fundamental elements of the science of medicine. Such knowledge can but inspire him with more profound respect for his own branch of study, which stands so closely related to the mother science. But, while the School seeks to keep constantly before the student the need for a proper appreciation of the character and standing of his professional relations, no pains are spared to give abundant instruction in all the elements which pertain to the subject that are needed to graduate well-trained, practical dentists.

Attention is therefore called to the fact that the student, during three entire years of his course, is under the supervision of a professor and his demonstrators, who are in daily attendance at the infirmary.

The library of the School contains many medical and dental books and periodicals, and is being constantly increased, the aim being to add the new and important books in the various departments as they are issued. The library is open for reference, and books are loaned to students. All the students are earnestly requested to make use of this privilege. Students also have access to the Boston Public Library, which contains one of the largest collections of scientific works in the United States.

Further opportunities for instruction are furnished by the valuable clinics and operations at the large hospitals of the city, which can be visited by the matriculates of this institution. Numerous operations upon the face and oral cavity are performed before students on public operating-days, and all con-

nected with the school are urged to avail themselves of the facilities thus offered.

THE NEW BUILDING

Owing to the rapid growth of the Medical and Dental departments of the College, it was found necessary to provide increased laboratory facilities. Accordingly, in 1900 the Trustees voted to provide a new building for the combined departments, and in consequence land was purchased upon the corners of Huntington and Rogers avenues and Courtland and Drisko streets. The new building is now completed and occupied. It is constructed of Jonesport red granite and brick, with terra cotta trimmings. It was designed by Mr. J. Philip Rinn of Boston, the architect of Robinson Hall and of the State Normal Schools at Salem and Fitchburg. In its arrangement Mr. Rinn was aided by the co-operation of committees selected from the board of Trustees and from the Medical and Dental Faculties. It contains nearly an acre-and-a-half of floor space; and is heated, ventilated and lighted according to the most approved modern methods. Modern improvements have been introduced in all departments, and every effort has been made to render the new building the best arranged as well as the largest structure of its kind in New England. Special attention is called to the new dental infirmary, which occupies the first floor of the dental wing. This room, 125x29 feet, is equipped and arranged in a manner similar to the operating room of a hospital; aseptic chairs, cuspidors, and brackets have been especially constructed for this school; steam sterilizers are provided for the disinfection of instruments, and it is believed that by these modern applications of asepsis to dentistry the new infirmary is among the best equipped and the most complete dental infirmaries in this country. The prosthetic department which corresponds in size to the infirmary, is equipped in the most approved modern fashion. For this department, electric power is supplied. The building may be reached by any Huntington avenue car with the exception of those of the Cross Town and Cambridge Lines.

Course of Instruction

ANATOMY

As a knowledge of the human body is considered essential to the well-equipped dentist, the course in anatomy will consist of lectures, recitations, and practical work in the dissecting room.

The lectures are illustrated by plates, manikins, and dissections before the class. Each student is required to dissect under the supervision of the Demonstrator of Anatomy, and will be required to pass an examination upon the part dissected.

The course is identical with that given the medical students, and is taken with them.

An ample supply of anatomical material is always obtainable.

CHEMISTRY

The work in chemistry is divided into two parts. During the second half of the first year it is the same as is given to the students of the Medical School. There are five lectures and two recitations each week, with six hours or more of work in the laboratory, including descriptive chemistry, qualitative analysis, and so much of theoretical chemistry as is necessary for a proper understanding of the subject. The classification of the carbon compounds, also, is treated at considerable length, and special reference is made to those compounds which are of interest in dentistry or medicine.

During the second year this preliminary training in chemistry is followed by lectures, recitations, and laboratory work in dental chemistry. The metals, with their alloys and salts as used in dentistry, the bones and the teeth, the saliva, and the chemistry of the mouth are carefully studied. This part of the work will be much extended in the near future, the high importance of chemistry to the dental profession being fully recognized.

PHYSIOLOGY

The course in Physiology is given throughout the latter half of the first year. It constitutes half of the entire work required of the student during that period, the modern "concentration method" of instruction being in practice in this school. The course consists of four recitations, two lectures, six hours of laboratory work, and three conferences for every student each week, the preparation of a technical written paper, and extra demonstrations.

In the recitations, familiarity with the substance of Stewart's "Manual of Physiology" and with the Syllabus is required. The lectures set forth the principles of general physiology, and suggest some of its relations to the allied sciences, especially anatomy. In the laboratory the student has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function. A strict practical examination may be held at the end of the year in the laboratory. The conferences give volunteers opportunity to become familiar with the literature on interesting physiological topics, which are then presented briefly in written reports and freely discussed by the class. Record both of the attendance and of the quality of the work done in the laboratory and recitation-room will be kept, and, with the conference, will largely determine the standing of the student in the department. In addition, a three-hour written examination, covering the entire work of the year, is held at the completion of the work, besides important, subsidiary written examinations, monthly.

By thus concentrating attention upon physiology during an adequate period, it is hoped that a thorough and indispensable grounding in the functions of the normal human organism will be acquired. Advanced work in physiology will be provided for competent students, by special arrangement with the head of the department, the constant aim being to adapt the labors of each student both to his needs and to his capabilities.

HISTOLOGY

The subject of histology covers the first half of the first year. The work during the first half of the allotted time will be identical with that of the students in the Medical School. This part of the work covers the study of the elementary tissues, treated comprehensively, beginning with their origin in the embryo. Dental histology will be taught during the second year. Particular attention will be given, in this department, to the study of the minute anatomy of the tooth. The development of the teeth will receive careful treatment. A training which gives the student a knowledge of the origin and history of the dental germ lays a foundation for the dentist which cannot be overestimated.

The department is equipped with microscopes which, on the payment of a small fee, will be at the service of such as cannot furnish instruments of their own.

ELEMENTARY HYGIENE

The chief object of instruction in hygiene at the commencement of professional study, is to promote a healthy moral, mental, and physical development. The student is informed of the penalties attendant on deviations from the path of rectitude. In the absence of the restraining influences of home, pure associates and wholesome surroundings are esteemed of paramount importance. The student is early taught how diseases are acquired through disregard of moral and physical laws, and how they are transmitted from one person to another. He is taught why a sound body is a barrier to many diseases, and that pure air, and water, wholesome food, proper clothing, and cleanly habits are essential for the best physical and mental growth.

The code of ethics taught in this department is designed to stimulate every student in the aspiration to obtain an honorable name in the profession.

OPERATIVE DENTISTRY

In operative dentistry the instruction is both didactic and clinical. Lectures are given covering the whole field, familiarizing the student with all known methods, the conditions under

which different filling materials are used, and the most approved manipulation of the same. Many lectures are followed by clinics before divisions of the classes, where attendance is obligatory. By this means every detail of the operation is impressed upon the minds of the students. Great emphasis is placed upon the preparation of cavities for filling. Instruction is further given concerning the pathological conditions of the mouth and the treatment of the same, exposed pulps, inflamed pulps, dead pulps, abcesses, inflammation of the peridental membrane, and allied subjects. Special attention is given to the preparation of cavities for porcelain filling, and the manipulation of the same. Prophylaxis also is taught, under improved systematized methods.

OPERATIVE TECHNICS*

The technical laboratory is situated on the lower floor, and is exceptionally well lighted from three sides. It is equipped with benches having lock drawers for each student, and has power lathe and other implements for convenient use.

Instruction in this course will be by lectures, illustrated by models and drawings, and by practical work on the part of the student. The student's work will include the study of the forms of teeth, with carving in ivory; study of the position and form of pulp chambers and canals, with dissection of teeth; proper methods of treating and filling pulp canals, with operations on extracted teeth. Porcelain inlay work, with practical example, also proper methods of forming cavities for filling, and the manipulation of all filling materials, will be included.

CLINICAL DENTISTRY

The method of instruction in clinical dentistry is by clinical lectures to the students of each class, accompanied by practical demonstration of various operations on the teeth and neighboring tissues.

Ample opportunity for work in practical operative dentistry

*NOTE.—The operations in the technical departments require a very large number of natural teeth, and a sufficient supply is sometimes difficult to get. It will therefore be to the interest of students if they will bring with them all the extracted teeth they can obtain.

is furnished in this department, and the student, by actual practice, receives training in the various dental operations, and in the diagnosis and treatment of diseased conditions of the mouth and teeth.

PROSTHODONTIA

The course of instruction in prosthodontia embraces the history, nature, and properties of the various materials used in making artificial dentures, with a special course to the second-year class in making and tempering instruments. Particular attention is given to practical manipulation of vulcanite, celluloid, aluminum, and cast metal, for dentures; to gold-plate work and the application of continuous gum to platina; to the manufacture of porcelain teeth in single and block forms; and to crown and bridge work. The natural form, color, and arrangement of the teeth, together with the entire range of procedure, from taking the impression to the completion of the case and its proper adjustment in the mouth, are thoroughly discussed.

ORTHODONTIA

The most important part of the course in orthodontia will consist of the treatment of practical cases. The work will be done by individual students, under the direction of the instructor. Every effort will be made to familiarize the student with the best and latest methods.

MATERIA MEDICA AND THERAPEUTICS

Instruction concerning *materia medica* and therapeutics consists of lectures, recitations, and laboratory exercises. Especial attention is given to the physiological action of drugs in its relation to their therapeutical application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory is designed to familiarize the student with all medicinal preparations and processes, and consists of exercises in which the class, in sections, is taught by practice. Prescription writing, and the metric system, will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

PATHOLOGY AND BACTERIOLOGY

The subjects of pathology and bacteriology will be considered together. This method permits showing the relation of bacteria to the disease processes which they produce. The work will consist of lectures, required laboratory work, and demonstrations. The student is made acquainted with the bacteria of the mouth, and is required to cultivate and study the important organisms. He is expected to carry out experiments to demonstrate the production of artificial caries. The subject of general pathology will be thoroughly covered. The special pathology of the mouth, and of the respiratory and intestinal tracts, will be given special attention. Inflammation, especially the infectious types, among which are the lesions produced by the pyogenic bacteria, will be given particular attention. The process of repair in soft tissues and bone, and tumors of the mouth and face, are studied from sections of human and experimental lesions, and illustrated by demonstrations of gross specimens. In connection with the study of infectious processes, the specific bacteria will be cultivated and studied. Diseases of the circulatory system are illustrated by lectures, and gross demonstrations. The methods of sterilization and their relative efficacy are practically studied, and tests are made of a large series of antiseptic and disinfectant substances.

The pathological and bacteriological department of the school occupies over four thousand square feet of floor space, with a frontage of one hundred and sixty feet. It is excellently lighted. The laboratory furnishes accommodation for one hundred students, and is supplied with all the materials necessary for thorough work.

THEORY AND PRACTICE OF DENTISTRY

The instruction in the theory and practice of dentistry is designed to teach the most advanced scientific discoveries in relation to this art.

It will include such subjects as the action of mouth bacteria, diseases dependent upon dental lesions, dental prophylaxis, oral hygiene, and the ethics of dental practice. The course

will be arranged to harmonize with and to supplement the work of the clinical department.

THEORY AND PRACTICE OF MEDICINE

The work in the theory and practice of medicine consists of a series of lectures given to the dental students by members of the Faculty and board of instruction of the Medical School. It is intended to include such subjects as general infectious and contagious diseases; syphilis; stomatitis and tonsilitis; diseases of the heart, kidneys, and skin; neuralgia and neurasthenia; disorders of the alimentary tract; pregnancy; tuberculosis. Lectures upon legal medicine and other subjects will be given. It is believed that a course of this description will be of the utmost practical value to dental students, as it will make them acquainted with the nature of a large class of diseases and conditions which they are liable to meet in the practice of dentistry. It is expected that Drs. Williams, Otis, Austin, Arnold, White, Stowell, Chenery, and Howe, of the Medical School, will contribute to this series of lectures.

SURGERY

The course in Surgery will consist of a systematic series of lectures covering its principles. These lectures will explain the fundamental facts which should be thoroughly understood by all students who propose to treat any portion of the human body. They will not be limited to surgery of the mouth, although especial attention will be given to this portion of the subject, but are intended to give the dental student a sound knowledge of surgery in general.

Antisepsis and anaesthesia will be minutely discussed, and practically demonstrated in the Infirmary, in conjunction with the Professor in Operative Technics and Anaesthesia. The student will be carefully instructed in the administration of ether and of nitrous-oxide gas. In addition to the daily instruction, one morning in each week will be devoted wholly to this work, the class being divided into sections. At this weekly demonstration, cases will be presented exemplifying the choice of an anaesthetic in the particular case. The danger signals

of anaesthesia will be considered, and the proper treatment explained. Local anaesthesia will receive careful attention, and its limitations pointed out.

The technic of aseptic and antiseptic methods in dental work will be thoroughly explained, and shown in connection with the demonstrations of anaesthetics.

ANAESTHESIA AND EXTRACTION

The extracting-room, a well-lighted apartment, is supplied with all needful instruments and appliances for extracting teeth, and for the performance of the simpler operations in surgery. Ample waiting rooms are adjacent, and also rooms for the care of patients after anaesthesia. Administrations of nitrous-oxide gas and ether are made daily. The room is at all times under the personal supervision of the Instructor in Anaesthesia.

CLINICAL CONFERENCE

Each clinical conference consists in the reading of an essay upon some practical subject—the written report of an actual case by a student of the Senior class, at a meeting of the class presided over by a member of the Faculty. The report is intended to bring out all the features of the case with regard to such topics as its etiology, pathology, and treatment. When possible, the patient will be presented to the class for examination. The case is fully discussed by the members of the class and by the professor in charge.

Requirements

FOR ADMISSION

Candidates for admission to this School, except as hereafter stated, must pass a written entrance examination in the following studies:—

(*a*) English. A composition of two hundred words upon some subject of general interest; the same to be criticised in relation to thought, construction, punctuation, spelling, and handwriting. The subject for this examination in 1903–1904 will be

chosen from the following:—(1) Shakespeare's Merchant of Venice; (2) Thackeray's Henry Esmond; (3) Burke's Speech on Conciliation with America, (4) Scott's Ivanhoe. Every candidate is expected to have read intelligently all the books prescribed.

(*b*) Algebra: such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

(*c*) Plane Geometry.

(*d*) Physics: such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

(*e*) Latin: a sight translation of such elementary Latin as is usually included in one year of study; as, for example, the first fifteen chapters of Caesar's Commentaries; also the translation into Latin of easy English sentences involving the same vocabulary.

Students who fail in one or more of these subjects may be admitted, subject to condition; but no student will be allowed to begin his second year whose entrance conditions remain unsatisfied.

Exceptions: Graduates of high and preparatory schools will be admitted on presentation of approved entrance certificates. Also, students holding certificates of entrance to a college or university, those holding the Regents' certificate of the State of New York, and graduates of a college or university will be admitted without examination. The institutions, however, issuing certificates must be accredited as standard by the community within which they are located.

FOR ADVANCED STANDING

Students who have taken courses in other accredited dental schools are admitted to advanced classes upon presenting satisfactory evidence that they have passed the examinations required for the class they desire to enter.

FOR PROMOTION

Students who have passed a majority of the examinations of the first-year class, and all entrance conditions, may be promoted to the second-year class. Students who have passed all first-year and a majority of the second-year examinations may be admitted to the third-year class; but no student will be promoted to the fourth-year class who has not passed all the first and second-year examinations, and a majority of those of the third year.

The Faculty reserve the right to change these requirements from time to time without further notice.

FOR GRADUATION

Candidates for the degree of Doctor of Dental Medicine must have fulfilled the following requirements: —

1. They must present a certificate that they are twenty-one years of age and of good moral character.

2. They must have attended four full courses of lectures in some accredited Dental School, the last of which shall have been at this School, and no two courses in the same twelve months.

3. They must have passed all the examinations required, and have satisfied the professors of Operative and Prosthetic Dentistry of their ability to meet satisfactorily the requirements of the profession. They must also deposit with the Secretary of the Faculty a satisfactory specimen of mechanical work, prepared during the course under the supervision of the Prosthetic department.

4. They must have satisfactorily dissected under the direction of a demonstrator of anatomy.

5. They must have paid all fees before the final examinations.

EXAMINATIONS

There are two periods of examination held each year in the School building. Examinations are in writing, and are held during the week previous to the opening of the regular course of lectures in the fall, and at the close of the course in the spring.

The fall examinations are for

(*a*) Students commencing the study of dentistry.

(*b*) Students applying for advanced standing.

(*c*) Students who failed in the spring.

The spring examinations are for promotion and graduation.

The entrance examinations will be held at 10 A.M. on Monday, June 13, 1904, and on Saturday, Oct. 1, 1904.

All students who intend taking any of the examinations must register their names with the Secretary, on or before a date to be announced upon the bulletin.

Students who have failed twice in their examinations upon a subject will not be admitted to a third examination without the payment of an extra fee of five dollars.

The examinations are as follows:

First Year. *Finals* in Anatomy, Physiology, General Chemistry, Histology, and Elementary Hygiene.

Second Year. *Finals* in Operative Technics, Materia Medica, and Therapeutics, Dental Chemistry, and Dental Histology.
Progress in Operative Dentistry, Clinical Dentistry, and Prosthetic Dentistry.

Third Year. *Finals* in Surgery, Hygiene, Pathology, and Bacteriology.
Progress in Orthodontia, Operative Dentistry, Clinical Dentistry, and Prosthetic Dentistry.

Fourth Year. *Finals* in Theory and Practice of Medicine, Theory and Practice of Dentistry, Orthodontia, Operative Dentistry, Clinical Dentisry, and Prosthetic Dentistry.

TEXT BOOKS

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy.—Gray, Cryer's Internal Anatomy of the Face, Weisse, Quain, Morris, Black's Dental Anatomy.

Physiology.—Syllabus as guide to experiments, Stewart's Text Book, Schäfer, Foster, Kirke, Porter, Verworn.

Chemisty.—Simons's Manual, Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis, Mitchell's Dental Chemistry.

Dental Histology and Microscopy.—Syllabus, Schäfer's Essentials in Histology, Stohr's Histology, Tome's Dental Anatomy (latest edition).

Pathology.—Syllabus, Miller's Micro-Organisms of the Human Mouth. Burchard's Dental Pathology.

Hygiene.—Egbert's Hygiene and Sanitation.

Materia Medica and Therapeutics.—Hare, Wood, Cushny, U. S. Dispensatory, Gerrish's Prescription Writing.

Practice of Surgery.—Park's System, Marshall's Injuries and Surgical Diseases of the Jaws, International Text-book of Surgery.

Dental Science and Operative Dentistry.—Kirk's Operative Dentistry, Garretson's Oral Surgery, Black's Dental Anatomy, Weeks's Operative Technics, American System of Dentistry, Harris's Practice of Dental Surgery, Taft's Operative Dentistry.

Prosthetic Dentistry.—Essig's American Text-book of Prosthetic Dentistry, Richardson's Mechanical Dentistry, Evans's Crown and Bridge Work, Gilbert's Vulcanite and Celluloid.

Bacteriology.—Abbott, Woodhead, Sternberg.

Medical Dictionary.—Dunglison.

EXPENSES

First Year

Matriculation	$ 5.00
Tuition	120.00

Second Year

Matriculation	$ 5.00
Tuition	120.00

Third Year

Matriculation	$ 5.00
Tuition	120.00

Fourth Year

Matriculation	$ 5.00
Tuition	90.00
Graduation Fee	30.00

Postgraduate fee for graduates of other schools	120.00
Single course	30.00
Postgraduate fee for graduates of this school	60.00
Single course	20.00

The fees are due and must be paid before November 1.

No student will be allowed to enter any of the laboratories until the matriculation fee and at least one-half of the tuition is paid, and after November 1 admittance to lectures will be allowed only upon presentation of a General Lecture Ticket, which will be issued by the Bursar when the tuition is paid in full.

The graduation fee is payable on or before the first day of May, and no student will be allowed to take any of the final examinations until the Bursar certifies that all fees or charges of every kind are settled.

The Bursar of the College will be at the School for the purpose of collecting fees, on Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from Oct. 1 to June 1.

There are no scholarships connected with the School.

Students will be charged the fee of the class in which they are catalogued.

The expenses of living in Boston vary according to the habits and desires of students, and need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained near the school at from $4 to $7 a week. Near the school building are several excellent boarding places charging moderate prices. Students will not be allowed to occupy rooms in the city that are not approved by the Faculty.

General Information

This School is a member of the National Association of Dental Faculties, and conforms to its rules, as well as to those of the National Association of Dental Examiners.

All students must be registered and in attendance within ten days after the commencement of lectures.

SESSIONS

The annual course of lectures begins on the first Tuesday in October of each year, and continues until the last Wednesday in May. The session of 1904-1905 will commence Tuesday, October 4, at 3 P.M.

VACATIONS

There are no exercises at the School during three days at Thanksgiving, and the weeks of Christmas and Easter, nor upon Washington's Birthday, Patriots' Day, and Memorial Day.

APPLICATIONS

Students intending joining the School for the first time must obtain from the Secretary an application blank, which they are required to fill out and return to him.

REGISTRATION

The registration is required of all students, yearly. Properly filled registration blanks for the year of 1904-1905 must be deposited with the Secretary on or before October 14.

ENTRANCE EXAMINATIONS

For the session of 1904-1905 the entrance examinations will be held at the School on Monday, June 13th, 1904, and Saturday, October 1, 1904. Students conditioned in entrance requirements must remove their conditions upon those dates.

Requests for the annual Announcement, and all other communications relating to the business of the school, should be addressed to the Secretary, CHARLES P. THAYER, A.M., M.D., Tufts College Dental School, Boston, Mass.

THE BROMFIELD-PEARSON SCHOOL

The Bromfield-Pearson School

BOARD OF INSTRUCTION

ELMER H. CAPEN, D.D., PRESIDENT

GARDNER C. ANTHONY, A.M., DEAN
Professor of Technical Drawing

SAMUEL C. EARLE, A.M.
Assistant Professor of English

GEORGE FRANCIS ASHLEY
Instructor in Drawing

PHILIP M. HAYDEN, A.B.
Instructor in French

CHARLES E. STEWART, S.B.
Instructor in Shopwork

_____ _____
Assistant in Mathematics

THE BROMFIELD–PEARSON SCHOOL

The Bromfield-Pearson School

The Bromfield-Pearson School is designed to meet the wants of young men whose preparation for engineering studies may be deficient in some of the required branches, but whose practice and experience in the applied part of engineering may qualify them to pursue some of the regular subjects while making up their deficiencies.

Thus a student may review all of academic algebra, or geometry, in one year, while pursuing college work in the subjects for which he may be prepared. Elementary instruction in French and English is given in the same manner, an arrangement which enables young men of mature mind and industrious habits to do the work required in a fitting school while anticipating much of the college course. Students who have already acquired a trade will save many hours required for work in the college course, and in most cases will profit much from their experience, in the keener appreciation of engineering studies. The Bromfield-Pearson School is not intended for those who should attend the regular high school or manual training course, but is designed to make the college course possible to many who have been deprived of these opportunities and cannot afford the time ordinarily required in a fitting school.

A two-years' course of study is provided. The first year may be taken as preparatory, either to the Engineering Department of the College, or to the technical course of the School. The course for the second year is arranged to meet the wants of those who are unable to continue their studies for a longer period, but require the essentials of an engineering education presented in a concise and practical manner. The course includes elementary mathematics, mechanics, and technical drafting.

The Bromfield-Pearson Building is a three-story building,

one hundred by fifty feet, comprising drafting and recitation rooms, offices, and shops, for conducting the special courses of the school, and the department of drawing and shop work in the College. One room is set apart as a study for such of the students as do not room at the College. For a fuller description of the building see page 167.

Course of Study.

FIRST YEAR

Preparatory Course

Algebra (Academic) will include quadratics, radicals, arithmetical and geometrical progression, together with the binomial theorem for positive exponents.

Geometry. The work comprises plane geometry and all of solid geometry, including spherical.

Plane Trigonometry may be taken during the fourth quarter.

English Grammar and Composition is pursued throughout the year.

French for the entire year is required of those who are preparing for a college course.

Drawing (Freehand) comprises the work required for entrance to the College, together with a course in Technical Sketching.

Drawing (Technical) includes the use of instruments, geometrical problems, elementary problems in projection (orthographic and isometric), tracing, and blue printing. Both this and the work in Freehand Drawing are identical with the college work in the same subjects, and all, or a part of these, may be omitted by students fitting for college.

Descriptive Geometry may be taken by such students as are sufficiently prepared to enter the college class. This subject is pursued during the second term, and is required of those taking the two-years' course.

Electives

Those who are sufficiently prepared in any of the studies named above may elect more advanced subjects, as follows:—

Preparation in elementary algebra, as indicated above, will admit to the course in COLLEGE ALGEBRA.

Preparation in elementary algebra, together with plane and solid geometry, will admit to FRESHMAN MATHEMATICS.

As the instruction in DRAWING is largely individual, the student may take the grade for which he is prepared.

SHOPWORK may be taken at any time when it will not interfere with required work.

PHYSICS. (See page 82.)

SECOND YEAR

Special Engineering Course

The Second Year is intended only for those who do not enter the Engineering Department of the College. Students will be admitted to college classes for which they may be fitted.

Advanced Algebra and Trigonometry are pursued with the college classes during the first term.

Analytical Geometry is taken during the second term.

Calculus. A special course is given during the second term. This subject is elementary, and is designed to give the student such a knowledge of the practical use of the Calculus as shall enable him to read, in an intelligent manner, books involving its use.

Mechanics involves the use of an elementary treatise, including the subject of Graphic Statics.

Machine Drawing. The work in Machine Drawing is conducted as in a well-organized drafting-room. It consists largely of freehand sketches and plainly finished drawings, made according to approved systems.

Mechanism. Under the head of Mechanism, cams, gearing, links, and other mechanical motions are treated, and much stress is laid on the practical application of principles.

Machine Design is begun as soon as the student has become proficient in the preceding subjects, and has acquired neatness, accuracy, and rapidity of execution.

Steam Engine. A brief course in the theory of steam is pursued in connection with the problems for design of Boilers and Engines. The subject of VALVE GEARS is considered at this time. The student is also taught to apply the INDICATOR, and to measure the power and consumption of water. Excellent opportunities are afforded at the College for this work, which is of a most practical character.

Moulding. A short but comprehensive course in the foundry is required of all second-year students. The special object in this training is to acquaint the future designer with the methods employed in the modern foundry, and thus to enable him to judge as to the best methods of constructing patterns.

ELECTIVES

The following subjects may be pursued in connection with the foregoing, when time and previous preparation will permit:—

Pattern Making. The work in Pattern-making includes Carpentry, Turning, Pattern-Making, and Moulding.

Forging. In a short course in Forging it is designed to make the student familiar with the metals and the method of working them. The exercises include heating, bending, drawing, upsetting, welding, tempering, and case-hardening.

Machine Work. Vise work in iron includes surface chipping, squaring and fitting, key-seating, scraping, and polishing. The machine practice consists not only in turning, planing, drilling, boring, and milling operations, but in the careful study of the machines, their efficiency, and capabilities.

Physics. (See page 82).

Chemistry. Instruction in Chemistry is given by means of lectures, recitations, and laboratory work. The lectures, which are illustrated by experiments, cover the ground of theoretical and descriptive inorganic chemistry. Students are charged for breakage, and four dollars a term for materials used.

General Information

REQUIREMENTS FOR ADMISSION

Students will be required to satisfy the instructors in charge of their ability to pursue the studies which they may elect. This may be done by certificate from a school previously attended, or by examination, oral or written, as may be deemed necessary.

In examinations either for entrance or for advanced standing, the students are considered individually, rather than collectively, in order to give the instructor the fullest knowledge of the standing of the student, and so to enable the latter to take such a place in the school as shall best fit him for his future work.

REGULATIONS OF THE SCHOOL

Students are subject to the rules governing students of the College.

Prompt and regular attendance, together with a faithful performance of all duties, is required.

Polite and orderly conduct is insisted upon. Any damage to school property must be made good by the students causing it.

Students who may elect any of the subjects in the regular College courses must attain at least sixty per cent. in those studies in order to remain with the class.

No change in program is permitted during the term.

Certificates of proficiency are given the special Engineering students who shall complete either of the courses comprised in one year. These certificates state the subjects which have been completed according to the requirements of the institution. No diploma is given, or degree conferred.

The tuition fee is one hundred and twenty dollars per year, payable as follows: sixty dollars on or before the 15th of October, and the remainder on or before the 15th of March.

No part of the tuition fee will be refunded to pupils who for any reason withdraw from the school before the close of the term for which the fee is paid.

Students board in commons or in private families at $3.50 to $5.00. Furnished rooms may be had at $1.50 or $2.00 a week. Other expenses vary with the economy of each student. Students living in the College dormitories furnish their own rooms.

The following estimates represent the fixed annual expenses:—

Tuition	$120.00	$120.00
Half-room rent	15.00	75.00
Board, $3.50 to $5.00 a week (36 weeks)	126.00	180.00
Physical training		10.00
Books, instruments, and supplies	15.00	25.00
Total	$276.00	$410.00

For other information address GARDNER C. ANTHONY, Dean of the Bromfield-Pearson School, Tufts College, Mass.

THE SUMMER SCHOOLS

The Summer Schools

THE SUMMER SCHOOL AT TUFTS COLLEGE

Instructors

FRANK G. WREN, A.M.
Professor of Mathematics

DAVID L. MAULSBY, A.M.
Professor of English Literature and Oratory

THOMAS WHITTEMORE, A.B.
Assistant Professor of English

THE HARPSWELL LABORATORY

Instructors

J. STERLING KINGSLEY, S.D.
Director, and Professor of Biology

FRED D. LAMBERT, PH.D.
Assistant, and Instructor in Natural History

The Summer Schools

THE SUMMER SCHOOL AT TUFTS COLLEGE

The Summer School of Chemistry was opened in 1897, in charge of Professor Durkee. In the summer of 1900, classes in Mathematics and English were added. History was taught in 1902.

In 1903, instruction was given in English poetry of the Victorian period, and in English prose of the nineteenth century. In mathematics, the work included trigonometry, analytic geometry, and the theory of least squares.

When satisfactorily completed, the work done in the Summer School can be counted toward a degree.

Board and furnished rooms may be obtained for six dollars a week, or board alone for three dollars and a half a week.

The tuition ordinarily is twenty dollars for each subject pursued. For a list of students in the Summer School at the College in the summer of 1903, see the Register of Students.

All inquiries concerning the Summer School should be addressed to Professor H. G. CHASE, SECRETARY, Tufts College, Mass.

THE HARPSWELL LABORATORY

In 1898 summer instruction in biology was given at South Harpswell, Maine, and in 1901 the college erected a small laboratory at that point, enlarging it in 1902. The location is admirably adapted for biological research, since the fauna of Casco Bay is extremely rich. The laboratory is equipped with boats, dredges, glassware, apparatus, and reagents, for study on the lines of anatomy and embryology. There is also a small library of the most important works.

The laboratory will be open in 1904 from June 20 until the middle of September. Instruction will be given in zoology,

botany, and beginning research. Instruction will commence July 5, and will continue six weeks. For each subject a fee of twenty-five dollars will be charged. Credit will be given for work completed as if the work had been taken at the College. Besides, there are a few private rooms for research students, the fee for these being fifteen dollars for the season.

South Harpswell is two hours by steamer from Portland. It is at the extremity of a narrow peninsula ten miles in length, and has a cool climate. There are several hotels and boarding houses where board and rooms may be had, at five dollars a week and upward.

A list of the students at the Harpswell Laboratory during the summer of 1903 follows the Register of Students.

For circulars and other information concerning the Harpswell Laboratory, inquiries should be directed to PROFESSOR J. S. KINGSLEY, Tufts College, Mass.

REGISTER OF STUDENTS

Graduate Department

Fellows

MARION, GUY ELWOOD — *Woburn* — A T Ω House
A.B., 1903 Miner Fellow in Natural History First Year Biology

THYNG, FRED WILBUR — *Ross Corner, Me.* — East Hall, 10
A.B., Colby, 1902 A.M., Tufts, 1903 Olmstead Fellow in Natural History Second Year Biology.

Resident Students

BLAISDELL, ALBERT CHESTER — *North Woburn*
A.B., 1901 First Year Mathematics

HAPGOOD, ERNEST GRANGER — *Boston* — *415 Newbury St.*
A.B., 1901 Second Year Economics

HUNTING, ETHEL PARKER — *Somerville* — *31 Dartmouth St.*
A.B., 1900 First Year English

MURPHY, ARTHUR, JR. — *Wollaston* — Dean Hall, 8
A.B., 1903 First Year Chemistry

Undergraduate Student

(doing advanced work as candidate for a higher degree)

RAYMOND KURTZ MORLEY — Dean Hall, 10
Mathematics

Courses in Arts and Sciences

[In the following list the course pursued by each student is indicated by the Italic letters immediately following the name. The signs used are as follows: courses leading to the degree of A.B., *ab*; to the degree of Ph.B., *ph*; to the degree of S.B.,—in Civil Engineering, *ce*; in Electrical Engineering, *ee*; in Mechanical Engineering, *me*; in Chemical Engineering, *ch e*; and in the first year of the Engineering Courses, before the differentiation of studies, *e*: to the degree of S.B., through the Science Courses,—in General Science, *sc*; in Biology, *bi*; in Chemistry, *ch*; and the Medical Preparatory, *mp*.]

The third column records the home address. The fourth column gives the address at Tufts College, unless the street is printed in Italics, in which latter case it is a part of the home address.

Senior Class

d'Amaral, Joseph	*ce*	*Azores Islands*	Dean Hall, 11
Berry, Charles Franklin, Jr.	*ab*	*Mattapan*	Θ Δ X House
Bond, Alfred Moore	*ce*	*Hudson*	Δ T Δ House
Bray, Bertha	*ab*	*Tufts College*	*98 Professors Row*
Bray, Compton Durlin	*ab*	*Tufts College*	*98 Professors Row*
Burnell, William Victor	*ce*	*Medford Hillside*	West Hall, 18
Chism, James Whiton	*ee*	*Westford, Conn.*	East Hall, 3
Clark, Alice Wellington	*ab*	*Waltham*	Metcalf Hall, 3
Clark, Georgiana	*ab*	*Somerville*	*60 Central St.*
Clifford, John William	*ab*	*Naugatuck, Conn.*	Δ T House
Countway, Gussanda	*ab*	*Somerville*	*28 Robinson St.*
Crowell, Mertie	*ab*	*Woods Hole*	Metcalf Hall, 13
Curtis, Helen Clare	*ab*	*Addison, Me.*	Start House, 7
Doherty, Frederick Joseph Howard	*ee*	*Boston*	West Hall, 11
Draper, Ernest Sparrell	*ce*	*Wayland*	West Hall, 2
Druley, Elmer Morey	*ab*	*Belpre, O.*	Δ T House
Ellis, Arthur Eugene	*ch*	*Somerville*	*16 Day St.*
Fay, Harold	*ab*	*Tufts College*	Θ Δ X *House*
Fleming, Patrick William	*ee*	*Thorndike*	West Hall, 7
Forrest, Oscar Edmund	*ee*	*Medford*	Δ T House
Galarneau, Dennis Camille Amédée	*ab*	*Springfield*	West Hall, 10
Harmon, Betsy Barker	*ab*	*Adams*	Metcalf Hall, 1
Hazeltine, William Everett	*ce*	*Lynn*	West Hall, 2
Hennelly, Thomas Patrick	*ab*	*Waltham*	
Hill, Robert William	*ab*	*Salem*	West Hall, 6
Hill, Sherburne	*ce*	*Methuen*	Δ T House
Hood, James Henry	*ce*	*Franklin*	Δ T Ω House
Hooper, Blanche Heard	*ab*	*Tufts College*	*124 Professors Row*

McAllister, Florence Lillian	*ab*	*W. Somerville*	*23 Wallace St.*
McMahon, Charles Edward	*ab*	*Randolph*	West Hall, 10
Marr, Myron Whitmore	*mp*	*Dorchester*	Z Ψ House
Maxwell, Leon Ryder	*ab*	*Medford*	Δ T House
Moore, Fred Atkins	*ab*	*Somerville*	Paige Hall, 13
Morley, Raymond Kurtz	*ab*	*Newton Centre*	Dean Hall, 10
Munro, Melville Smith	*ee*	*Medford*	*59 George St.*
Newell, Lewis Winslow	*ab*	*Salem*	East Hall, 24
Norcross, Theodore White	*ce*	*Medford*	Δ T House
Parker, Clara Elizabeth	*ab*	*Middleboro*	Metcalf Hall, 9
Parker, Jessie Merrill	*ab*	*Uxbridge*	Start House, 3
Pearson, George Edward	*ab*	*W. Somerville*	*325 Highland Ave.*
Perkins, Henry Farnsworth	*me*	*Haverhill*	Δ T House
Phillips, Ethel May	*ab*	*W. Somerville*	*1088 Broadway*
Preble, Alfred Emerson	*bi*	*Wilmington*	
Preston, Mertie Belle	*ab*	*Somerville*	*51 Jacques St.*
Richardson, Harry Herbert	*ab*	*Cambridge*	*230 Prospect St.*
Roberts, Harriet Norma	*ab*	*Medford Hillside*	*35 Emery St.*
Russell, Clara Rebecca	*ab*	*Winchester*	*182 Cambridge St.*
Sander, Eleonore Henriette Thekla	*ab*	*Cambridge*	*21 Holmes St.*
Sanders, Annie Louisa	*ab*	*Wayland*	Metcalf Hall, 3
Saunders, Ernest Alexander	*ce*	*Somerville*	*24 Powder House Ter.*
Scoboria, Clarence Preston	*ab*	*Somerville*	Δ T Δ House
Spaulding, Rachel Josephine	*ab*	*Jaffrey, N. H.*	Metcalf Hall, 8
Standish, Clara May	*ph*	*Segreganset*	10 Lee St.
Teague, Donald Spencer	*ab*	*Caribou, Me.*	West Hall, 6
Tenney, Ruth	*ab*	*Auburn, Me.*	Metcalf Hall, 4
Titcomb, Grace	*ab*	*Farmington, Me.*	7 Francesca Ave.
Tompson, George Morris	*ce*	*Wakefield*	
Trout, Delmar Everett	*ab*	*Springfield, O.*	Paige Hall, 9
Tufts, Florence Augusta	*ab*	*Malden*	*38 Clifton St.*
Walker, Florence Helen	*ab*	*W. Somerville*	*26 Wallace St.*
Watkins, Clarence Elmore	*ab*	*S. Manchester, Conn.*	Δ T House
Wood, Edward Holton	*ce*	*Saco, Me.*	West Hall, 3

Junior Class

Armstrong, Elias Benjamin	*ph*	*Waltham*	Dean Hall, 9
Atsatt, John Thornton	*ab*	*Mattapoisett*	Α Τ Ω House
Bailey, Vesta Louise	*ab*	*W. Somerville*	*50R College Ave.*
Bean, William Wendell	*ee*	*W. Medford*	*34 Canal St.*
Bidwell, George Leslie	*ch*	*Jamaica Plain*	West Hall, 32
Bodge, Harold Heath	*ee*	*Westbrook, Me.*	Dean Hall, 3
Bowker, Ella Wallace	*ab*	*Somerville*	*2 Hillside Ave.*
Burnham, Fred Walker	*ab*	*Williamstown, Vt.*	East Hall, 12

Calderwood, Mellen Greely	*ab*	*Portland, Me.*	West Hall, 26
Chevalier, Louis	*ce*	*Naugatuck, Conn.*	28 Professors Row
Chase, Alfred Whitman	*ee*	*Cambridge*	*1667 Cambridge St.*
Claus, Henry Turner	*ab*	*Saugus*	West Hall, 4
Cobb, Ernest	*ph*	*Tufts College*	*West Hall, 32*
Crockett, Ernest Dana	*me*	*Dexter, Me.*	Δ Υ House
Dodge, Waldo Edgar	*me*	*Hyde Park*	West Hall, 20
Dods, Francis Alexander	*ee*	*Somerville*	*24 Partridge Ave.*
Ewell, Walter Warren	*ce*	*Medford*	*236 Salem St.*
Farnum, Carrie Alice	*ab*	*Marlboro*	Metcalf Hall, 15
Farrrar, Edward Leslie	*ee*	*Assinippi*	East Hall, 24
Ford, Herman Flagg	*ee*	*Danville, Me.*	West Hall, 30
Gammon, Robert Clair	*me*	*Lynn*	Δ Τ Δ House
Garton, Florence Harriet	*ab*	*W. Somerville*	*113 College Ave.*
Gay, George Willard, Jr.	*sc*	*Norwood*	Δ Υ House
Gordon, Harold Loring	*ce*	*Auburndale*	Δ Υ House
Guild, Emily Elizabeth	*ab*	*Brattleboro, Vt.*	Start House, 2
Harrington, Charles Ernest	*me*	*Lynn*	West Hall, 20
Hunt, Murray Harding	*sc*	*Worcester*	West Hall, 16
Jenks, Daniel Ashley	*ab*	*Holyoke*	Dean Hall, 9
Knight, Herbert Carr	*ee*	*Woodfords, Me.*	West Hall, 30
Loring, Seth Arthur	*ab*	*Portland, Me.*	West Hall, 7
Lovejoy, Arthur Waldo	*ab*	*Lowell*	Θ Δ Χ House
Lowe, George Albert, Jr.	*ce*	*Rockport*	Α Τ Ω House
McCoy, Florence Lydia	*ab*	*Somerville*	*62 Main St.*
Marshall, Wilnah Virginia	*ph*	*New Salem*	Metcalf Hall, 5
Milner, John George	*ee*	*Somerville*	West Hall, 12
Morrison, Donald	*ab*	*Skowhegan, Me.*	Dean Hall, 4
Munroe, Carrie Josephine	*ab*	*Somerville*	*70 Myrtle St.*
Parks, Ralph Silas	*ab*	*Hudson*	East Hall, 14
Perry, Luther Packard	*ee*	*Shelburne Falls*	East Hall, 2
Powers, Lorin Charles	*ab*	*Washington, D. C.*	West Hall, 28
Sanders, Amalie Cecilia Dorothea	*ab*	*Methuen*	Metcalf Hall, 2
Shaw, Frank Leslie	*ab*	*Augusta, Me.*	Α Τ Ω House
Stone, Charles Henry	*sc*	*Waterbury Ctr., Vt.*	24 Emery St., Medford
Swansey, Katherine Josephine	*ab*	*Somerville*	*102 Prospect St.*
Sweetser, Sidney Pulsifer	*ab*	*Philadelphia, Pa.*	West Hall, 27
Symmes, Gertrude Locke	*ab*	*Winchester*	*77 Main St.*
Taylor, Chester Emerson	*me*	*Clinton*	Δ Υ House
Taylor, Mabelle Woodbury	*ab*	*Hudson*	Start House, 6
Temple, Charles Hosea	*ab*	*Hinsdale, N. H.*	Paige Hall, 1
Viles, Blynn Fred	*ce*	*Medford*	*81 Main St.*
Warner, George Loring	*ab*	*Palmer*	Ζ Ψ House

Wellman, Hugh Horace	*ce*	*Westminster West, Vt.*	West Hall, 18
Wheeler, Grace Inez	*ab*	*Milan, N. H.*	Start House, 6
Whitehouse, Wendell Lewis	*ch e*	*Somerville*	*74 Glenwood Road*
Whitney, Howard Rogers	*ce*	*Somerville*	*107 Sycamore St.*
Williams, Arthur	*ab*	*Charlestown*	*1 Prospect St.*
Wilson, Harry Percival	*ce*	*Worcester*	West Hall, 11
Wise, William Mason	*ab*	*West Newton*	Θ Δ X House
Witham, Ernest Clair	*sc*	*Westbrook Me.*	West Hall, 19
Woodbury, Charles Harlow	*ab*	*Auburn, Me.*	Z Ψ House
Woodward, Frank Coy	*ce*	*East Pepperell*	Dean Hall, 1
Works, Austin Melvin	*ab*	*Somerville*	*214 Medford St.*

Sophomore Class

Abbe, Arthur James	*ab*	*Springfield*	West Hall, 27
Abbott, John Blackler	*ch*	*E. Bethel, Vt.*	East Hall, 1
Ames, Harvey Libby	*me*	*Somerville*	*120 Perkins St.*
Boardman, Seth Howard	*ee*	*Georgetown*	Δ T Ω House
Buckley, James Robert	*ab*	*No. Grosvenordale, Ct.*	West Hall, 14
Buxton, Sara Lucy	*ab*	*Somerville*	*286 Highland Ave.*
Cannell, Wirt Virgin	*ce*	*Bridgton, Me.*	East Hall, 21
Chandler, Eva Lillian	*ab*	*Barton Landing, Vt.*	Metcalf Hall 10
Chapin, Charles Mathews	*ab*	*Rockland, Me.*	West Hall, 26
Cheney, Genevieve Henrietta	*ab*	*Delevan, N. Y.*	Metcalf Hall, 2
Clement, Fannie May	*ab*	*Everett*	*4 Dean St.*
Coupal, James Francis	*sc*	*Everett*	West Hall, 16
Cousins, Clarence Edwin	*ab*	*Salem*	East Hall, 11
Crowell, Freeman Shedd	*e*	*Lowell*	West Hall, 22
Currier, Rudolph Winfield	*ab*	*Lynn*	East Hall, 13
Cutler, Leon George	*e*	*No. Montpelier, Vt.*	Z Ψ House
Dix, Leon Edward	*e*	*Hartford, Conn.*	East Hall, 7
Dole, Henry Haile	*e*	*Arlington*	*361 Massachusetts Ave.*
Douglas, Jerome Harvey	*ee*	*Hull*	West Hall, 22
Dow, Roy Gay	*ee*	*Bridgton, Me.*	67 Prescott St., W. Medford
Dustin, Maurice Nathaniel	*e*	*Dexter, Me.*	Δ T House
Edwards, Alice Hayward	*ab*	*W. Somerville*	Start House, 7
Ellis, Herbert Cram	*me*	*Detroit, Mich.*	Z Ψ House
Farnsworth, Dana Tufts	*ab*	*Taunton*	West Hall, 29
Fisher, William Ernest	*ee*	*W. Somerville*	*26 Hancock St.*
Fogg, Ralph Justin	*ce*	*Lynn*	East Hall, 13
Foss, Fred Gilman	*ee*	*North Andover*	East Hall, 9
Graves, Otho McCarroll	*ce*	*Willimantic, Conn.*	West Hall, 23
Gudge, Benjamin Joseph	*ee*	*White City, Kan.*	Dean Hall, 2
Hall, Alfred Vargrave	*ab*	*Peru, Me.*	Δ T House
Haskell, Harold Clifford	*ab*	*Rockland, Me.*	Z Ψ House

Hayes, Chester Adams, Jr.	*ee*	*No. Berwick, Me.*	East Hall, 7
Hayes, Will Francis	*mp*	*Georgetown*	West Hall, 3
Hickey, Edwin Ernest	*me*	*Cambridge*	East Hall, 1
Holden, Joseph William	*ce*	*Meriden, Conn.*	East Hall, 34
Inglis, Henry Baxter	*ee*	*Detroit, Mich*	ΖΨ House
Jackson, Mabel Estella	*ab*	*Lexington*	Start House, 1
Jackson, Minnie Wallis	*ab*	*Medford*	*47 Fulton St.*
Johnson, Phebe Chandler	*ab*	*Spencer*	Metcalf Hall, 13
Jones, John Paul	*ee*	*Woburn*	*662 Main St.*
Judkins, Agnes Frances	*ab*	*Merrimac*	Metcalf Hall, 16
Knowlton, Edward Allen	*ab*	*New Bedford*	West Hall, 25
Lamb, Norval Edmund	*ch e*	*Attleboro*	West Hall, 9
Lendall, Harry Nelson	*ce*	*Lynn*	West Hall, 29
Mackenzie, Fred Ross	*ab*	*Cliftondale*	West Hall, 4
Mann, Bertha Hill	*ab*	*Norway, Me.*	Start House, 5
Metcalfe, Ernest George	*ab*	*Brooklyn, N. Y.*	ΖΨ House
Merrill, Carle Jewett	*me*	*Somerville*	*339 Summer St.*
Michael, Herbert Ledlie	*ab*	*Kingston, N. Y.*	West Hall, 25
Miller, George Stewart	*ab*	*No. Andover*	East Hall, 11
Mullen, John Joseph	*ce*	*Wellesley*	East Hall, 6
Nash, Curtis Whithed	*ab*	*Winchester*	ΖΨ House
Noyes, Marion Temple	*ab*	*W. Somerville*	*15 Park Ave.*
Nye, Laila Campbell	*ab*	*W. Somerville*	*33 Electric Ave.*
Page, Arthur Smith	*ee*	*Everett*	*36 Dean St.*
Paine, Alice Peabody	*ab*	*Groveland*	Start House, 1
Peterson, John Ferdinand	*ee*	*Lynn*	East Hall, 34
Phillips, Leslie Blaine	*ee*	*W. Somerville*	*1088 Broadway*
Priest, Alice Eaton	*ab*	*Canton, N. Y.*	Start House, 3
Ringdahl, Frederick Wilhelm	*ab*	*Portland, Me.*	West Hall, 16
Roberts, Charles Fred	*ce*	*Caribou, Me.*	Δ Υ House
Saunders, Louise Melbourne	*ab*	*Somerville,24 Powder House Terrace*	
Seery, Francis Joseph	*ce*	*Waterbury, Conn.*	East Hall, 27
Shearer, Gordon Grant	*ee*	*Somerville*	*44 Morrison Ave.*
Sibley, Ruth Annie	*ab*	*Spencer*	Metcalf Hall, 12
Small, Florence Estelle	*ab*	*So. Portland, Me.*	Start House, 4
Smith, Richard Curtis	*ce*	*Medford*	*42 Dudley St.*
Speirs, Ernest L.	*ee*	*Westbrook, Me.*	West Hall, 9
Steele, Martha Taylor	*ab*	*Stoughton*	Metcalf Hall, C
Tewksbury, Ella May	*ab*	*Lexington*	*12 Hancock Ave.*
Tripp, Angie May	*ab*	*Woburn*	*2 Eastern Ave.*
Vickery, Reina Gladys	*ab*	*Lexington*	*Percy Road*
Whitman, Clara Hattie	*ab*	*Fishers Island, N. Y.*	Metcalf Hall,A
Whitman, Hugh Redway	*ab*	*Fishers Island, N. Y.*	West Hall, 31
Winslow, Geoffrey	*ce*	*New Bedford*	West Hall, 23

Freshman Class

Armstrong, Marjorie Wright	*sc*	*Somerville*	*112 Sycamore St.*
Backus, Florence Erie	*ab*	*Somerville*	*67 Curtis St.*
Backus, John Alexander	*ee*	*Somerville*	*26 Kidder Ave.*
Bacon, Theodore Sheldrake	*e*	*Waltham*	*22 School St.*
Baker, Lester David	*e*	*Bridgeport, Ct.*	East Hall, 30
Barry, Walter Vincent	*e*	*Portland, Conn.*	East Hall, 16
Bartlett, Gertrude Elisabeth	*sc*	*Kingston, N. H.*	Metcalf Hall, 6
Bean, Charles Franklin Kingsbury	*sc*	*W. Medford*	*51 Harvard Ave.*
Benoit, Armand William	*e*	*Lawrence*	East Hall, 32
Bertwell, Margaret May	*ab*	*Somerville*	*48 Cameron Ave.*
Blake, William Edwin	*ab*	*Huntington*	East Hall, 4
Buchanan, Perley J.	*e*	*Barre, Vt,*	East Hall, 8
Burrage, Alvah Lowell	*e*	*Lowell*	East Hall, 18
Case, Ralph Edward	*e*	*Albany, N. Y.*	West Hall, 31
Clare, Charles Henry	*e*	*Quincy*	East Hall, 28
Clarke, Bertrand Moody	*ab*	*Waltham*	Dean Hall, 7
Cliff, Joseph Arthur	*e*	*New Dorchester*	*67 Edson St.*
Coggan, Linus Child	*ab*	*Malden*	Dean Hall, 7
Colbert, Leo Otis	*e*	*Charlestown*	*34 Union St.*
Conner, Carlton Nudd	*e*	*Lynn*	East Hall, 25
Crawford, Irena May	*ab*	*North Dana*	Metcalf Hall, 11
Cummings, George Smith	*e*	*Lynn*	East Hall, 9
Curtiss, Prudence	*ab*	*Hingham*	Start House, 5
Davis, Clarence Benjamin	*e*	*Lowell*	East Hall, 18
Derry, Harold Woodard	*e*	*N. Attleboro*	East Hall, 31
Dickinson, Frank Leroy	*ch*	*Woodstock, N. B.*	East Hall, 8
Dillingham, Alexander	*e*	*Bridgeport, Conn.*	East Hall, 30
Doherty, Mary Louise	*ab*	*Woburn*	*15 Monroe St.*
Douglas, Maude Geraldine	*ab*	*Hull*	Metcalf Hall, 11
Drew, Philip Augustine	*e*	*Portland, Maine*	West Hall, 21
Drummond, Eva Alberta	*ab*	*Brattleboro, Vt.*	Start House, 4
Duffey, Cornelius Francis	*e*	*East Weymouth*	33 Yarmouth St., Boston
Dwelley, Charles Theodore	*e*	*Arlington Hts.*	*146 Park Ave.*
Eveleth, Norris Pulsifer	*e*	*Auburn, Me.*	165 College Ave.
Finley, Joseph Arthur	*sc*	*Natick*	West Hall, 13
Folsom, Josie Burbank	*ab*	*Medford*	*35 College Ave.*
Ganteaume, Alphonse	*e*	*Trinidad, B. W. I.*	119 Adams St.
Geer, George Independence	*mp*	*Westbrook, Me.,*	East Hall, 25
Hadley, Norris Edmund	*e*	*Somerville*	*35 Conwell Ave.*
Hahn, Frances Anna	*ab*	*Everett*	*12 Bennett St.*
Hannah, Persis Dwight	*ab*	*Medford*	*53 Oakland St.*
Hanscom, Henry Blake	*ab*	*Leeds Junction, Me.*	Δ Υ House

Harris, George Wesley	*ab*	*Boston*	West Hall, 16½
Horr, Howard Atkinson	*e*	*So. Sudbury*	
Jeffers, Robert Buck	*e*	*Chelsea*	West Hall, 5
Jones, Chester Hardy	*e*	*Norwood*	East Hall, 5
Joski, Sadie	*sc*	*Roxbury*	*436 Dudley St.*
Knowlton, Frank Weston	*e*	*Chelsea*	West Hall, 24
Lakin, Roger	*ab*	*So. Braintree*	Dean Hall, 5
Lewis, Frederick William	*e*	*Bethlehem, N. H.*	East Hall, 19
Lomax, George Chester	*e*	*Somerville*	*7 Miller St.*
Lowell, James Brower	*e*	*Somerville*	*37 Harvard St.*
Manotas, Carlos Manuel	*mp*	*Colombia, S. A.*	24 Emery St., Medford Hillside
Matthews, John Ormsby, Jr.	*ab*	*Palmer*	West Hall, 8
McGourty, John Farrell	*me*	*Boston*	*22 Francis St.*
Mergendahl, Titus Eugene	*e*	*Kingston, N. Y.*	East Hall, 29
Moore, Percy Roberts	*e*	*Montgomery*	East Hall, 4
Nason, Percy Durell	*e*	*Bethlehem, N. H.*	East Hall, 19
Nelson, Harry Merton	*e*	*East Ryegate, Vt.*	West Hall, 14
Neville, Gertrude Alena	*ab*	*Woburn*	*22 Kilby St.*
Ober, Ernest Chester	*e*	*Northeast Harbor, Me.*	West Hall, 13
Orne, Marion Frances	*ab*	*Somerville*	*43 Fairmount Ave.*
Packard, Merton Foster	*e*	*Marion*	East Hall, 33
Phelan, John Joseph	*e*	*Lowell*	*245 Gorham St.*
Proctor, Fred Willis	*ce*	*Wilton, N. H.*	East Hall, 6
Reynolds, Frank Leo Sinclair	*mp*	*Vernon Ctr., N. Y.*	Dean Hall, 8
Rich, Marion	*ab*	*Chelsea*	Metcalf Hall, 6
Russell, Albert Irons	*sc*	*Providence, R. I.*	West Hall, 5
Sanborn, John Freeman	*ce*	*Newmarket, N. H.*	West Hall, 15
Savage, Howard James	*ab*	*Meriden, Conn.*	West Hall, 19
Smead, Alfred Felton	*me*	*Greenfield*	West Hall, 17
Smith, Hugh Wallace	*ab*	*Everett*	*565 Broadway*
Smith, Madison James	*e*	*Bartlett, N. H.*	East Hall, 21
Starrett, Arthur Rawson	*e*	*N. Andover*	East Hall, 17
Sturtevant, Ethel Powys	*ab*	*Somerville*	*78 Columbus Ave.*
Sullivan, Patrick Joseph	*e*	*Charlestown*	*47 Baldwin St.*
Sullivan, Eugene Joseph	*ab*	*Boston*	*81 Mountfort St.*
Tarr, Harold Eugene	*e*	*Lowell*	East Hall, 20
Tay, Samuel Wright	*e*	*Medford*	*288 Forest St.*
Thorpe, Winnifred Rosamond	*ab*	*Highlandville*	Metcalf Hall, 10
Todd, Arthur Oswald	*e*	*Trinidad, B. W. I.*	119 Adams St., Medford
Turner, Harlan Barzillai	*e*	*Portland, Me.*	West Hall, 24
Ungar, Frida Emily	*ab*	*Roxbury*	*2 Dudley Pl.*
Warner, Willis Chauncey	*e*	*Cromwell, Ct.*	East Hall, 33

Wilson, Edgar Perkins	*e*	*New Rochelle, N. Y.*	West Hall, 8
Wilson, Harold David	*e*	*Shelburne Falls*	East Hall, 5
Woodward, Herbert Watson	*e*	*Somerville*	*171 Powder House Boulevard*
Wyckoff, Joseph Ray	*ab*	*Franklin*	Dean Hall, 3
Alvarenga, Francisco Bento de	*e*	*San Paulo, Brazil*	East Hall, 16
Maxwell, James Davidson	*mp*	*Bangor, Me.*	Dean Hall, 4
Porter, Bella Celia	*ab*	*Stoughton*	Metcalf Hall, C

Special Students

Aldrich, Bertha Alice III. *Music*	*No. Cambridge*	*27 Blake St.*
Brown, Dorothy Margaret Temple II. *Music and Biology*	*Winchester*	Metcalf Hall, 14
Crabtree, Arthur Howard II. *Surveying*	*Somerville*	*112 Glenwood Road*
Dunn, Winfield Tilley I. *Chemistry*	*Cambridge*	*207 Green St.*
Eames, Louise Bradley II. *Modern Languages and Music*	*Reading*	Metcalf Hall, 14
Fox, Carrie Edwards I. *Greek*	*Roxbury*	*24 Waban St.*
Fraser, Beatrice May I. *English*	*Somerville*	*16 Porter St.*
Harris, Ada Ellsworth I. *English*	*Somerville*	*33 Mt. Vernon St.*
Hazeltine, Clyda Blanche III. *Modern Languages*	*W. Somerville*	*20 Day St.*
Honey, James Albert I. *Philosophy*	*Pretoria, So. Africa*	35 Kidder Ave., W. Somerville
Mulvey, Ernest Claffey I. *Economics.*	*Worcester*	East Hall, 31
Park, Florence Colburn III. *Music*	*Winchester*	*12 Norwood St.*
Prince, Percy Sylvester II. *English*	*Salem*	West Hall, 12

Divinity School

Fourth Year

Bowers, William Wilgus	*Reading*	Paige Hall, 16

Third Year

Emmons, Charles Henry	*Bridgeport, Conn.*	Paige Hall, 6
Howes, George Henry	*Lowell*	Paige Hall, 7
Lewis, George Hallam	*Meriden, Conn.*	Paige Hall, 31
Miller, George Arthur	*N. Attleboro*	Paige Hall, 30

Second Year

Angel, Frank James	*East Aurora, N. Y.*	Paige Hall, 36
Gay, George Augustus	*Meriden, Conn.*	Paige Hall, 19
Parkhurst, Henry Adams	*Dunstable*	Paige Hall, 25
Raspe, Otto Steinehofer	*Baltimore, Md.*	Paige Hall, 34
Willis, Sidney Joel	*West Concord, Vt.*	Paige Hall, 24

Special Students

Gale, Howard Charles	*Haverhill*	Paige Hall, 22
Weakley, James Richard	*Philadelphia, Pa.*	Paige Hall, 4

FIVE YEAR A.B.–B.D. COURSE

Third Year

Hersey, Harry Adams, A.B., 1903	*Dorchester*	Paige Hall, 12
Lobdell, Nelson Lyman, A.B. (St. L.)	*Victor, N. Y.*	Paige Hall
Moore, Fred Atkins	*Somerville*	Paige Hall, 13
Temple, Charles Hosea	*Hinsdale, N.H.*	Paige Hall, 1

Second Year

Trout, Delmar Everett	*Springfield, O.*	Paige Hall, 9

Bromfield-Pearson School

Alpaugh, Walter George	*Willimantic, Conn.*	West Hall, 21
Ballou, Ernest Arlon	*Portsmouth, N. H.*	East Hall, 14
Dickenson, Theo Edward	*Kansas City, Mo.*	78 Rogers Ave., Somerville
Doherty, James Thomas	*So. Boston*	*173 K St.*
Flint, Lester Sylvanus	*Everett*	*16 Waverly Ave.*
Farrand, Arthur Mallalieu	*Whitinsville*	East Hall, 26
Hanley, James Francis	*Concord*	
Hatch, Fred Eugene	*Kezar Falls, Me.*	9 Dearborn St., Medford
Hunt, Arthur Harry	*So. Boston*	*401 E. Seventh St.*
Ingalls, James Leon	*Whitinsville*	East Hall, 26
Killpatrick, Clarence Thomas	*Lowell*	East Hall, 20
Knowles, Charles H.	*Cambridge*	*16 Carver St.*
Norwood, Edgar Alva	*Rockport*	85 Ferry St., Everett
O'Donnell, Michael James	*Boston*	*42 Washburn St.*
Patchen, Frank Fanton	*Danbury, Conn.*	East Hall, 29
Payrow, Harry Gordon	*Lynn*	*17 Chase St.*
Russell, Ernest Wilmot	*Rockport*	East Hall, 15
Sanborn, Levi Newell	*Hampton Falls, N.H.*	East Hall, 28
Svensen, Carl Lars	*Switzerland*	312 Boston Ave., Medford
Willy, Max Paul	*New Orleans, La.*	East Hall, 23

Medical School

[P. O. Address, 416 Huntington Ave., Boston, Mass.]

Fourth Year

Abbott, Harry Daniel . . . . . *Salem*
Ameno, Joseph Louis . . . . . *Boston*
Anderson, John Hammond . . . . . *Quincy*
Bennett, William Henry . . . . . *Roxbury*
Biron, Wilfred Louis . . . . . *Manchester, N. H.*
Brady, Frank Robert . . . . . *Lowell*
Buckley, Daniel Joseph . . . . . *Arlington*
Bushold, Fred George . . . . . *Lawrence*
Carley, Margaret Elizabeth . . . . . *Boston*
Chandler, Clarence Luther . . . . . *Townsend*
Chase, Lawrence Milton . . . . . *W. Duxbury*
Chase, James Smalley . . . . . *W. Duxbury*
Dailey, Edward Joseph . . . . . *Somerville*
Dearborn, Luther Gould, Jr., A.B. . . . . *Somerville*
Faxon, Eudora Winifred . . . . . *Boston*
Gettings, Thomas Lawrence . . . . . *Fall River*
Harrington, Robert Brine . . . . . *Somerville*
Harrison, Henry . . . . . *Ware*
Hastings, Gertrude Wentworth, A.B. (Cornell) *Winthrop*
Holt, Lucinda Mary-Belle, B.L. (Smith) . . . *Portland, Me.*
Kenney, Walter Clement . . . . . *Sharon, Vt.*
Levins, Nathan Noah . . . . . *Boston*
McGurn, William J. . . . . *Bridgewater*
Murphy, Charles Augustus . . . . . *Boston*
Murphy, Thomas William . . . . . *Lawrence*
Myles, Leo Thomas . . . . . *Cambridge*
Patterson, Alice Mariah, M.D. . . . . *Peabody*
Pease, Charles Valentine . . . . . *Dorchester*
Peterson, Clark Kimball . . . . . *E. Boston*
Pofcher, Elias Harris . . . . . *Everett*
Reilly, Thomas Ignatius . . . . . *Brockton*
Robinson, Philip Eaton . . . . . *Boston*
Robison, J. Collier . . . . . *Fillmore City, Utah*
Schmidt, Richard Diedrich . . . . . *Roxbury*
Seymour, Horace Darling . . . . . *Warren, R. I.*

Shay, Charles Edwin . . . . . *Roxbury*
Smith, William Morgan . . . . . *Jamaica Plain*
Stockbridge, Alberto Horatio . . . . . *Cochituate*
Stoodley, Harry Marr . . . . . *Somerville*
Sullivan, Cornelius Augustine . . . . . *Everett*
Toohey, Thomas Victor . . . . . *Roxbury*
Tower, Freeman Augustus, A.B. . . . . *Sterling Junction*
Walch, Joseph Francis . . . . . *Lawrence*
Wallace, Annie Marie . . . . . *West Gore, N. S.*
Woodill, Edith Esty . . . . . *Dorchester*

Third Year

Bigelow, Alice Houghton, A.B. (Boston Univ.) *Jamaica Plain*
Bogan, Frederic Leon . . . . . *Charlestown*
Brassil, Timothy Francis . . . . . *Cambridge*
Brearton, Edward John . . . . . *South Boston*
Breen, James Henry . . . . . *Hudson*
Brown, Edison William . . . . . *Dorchester*
Carvill, Lizzie Maud, A.B. . . . . *Somerville*
Cox, Ann Caroline . . . . . *Boston*
Corey, Frederick Hall . . . . . *Roxbury*
Curry, Ernest Francis . . . . . *Melrose Highlands*
Curtis, Alton Kallock . . . . . *Boston*
Derby, Fred William . . . . . *Arlington*
Dunham, Adeline Frances . . . . . *Boston*
Dutcher, William Austin . . . . . *Boston*
Dwyer, William Joseph . . . . . *Cambridge*
Eddy, Merritt Otis . . . . . *Townshend, Vt.*
Fiske, Rebecca Cutter . . . . . *Grafton*
Foster, Maude Ashley . . . . . *Melrose*
Galbraith, Anna Veitch . . . . . *Victoria, Canada*
Gile, Frank Herbert, Jr. . . . . *Melrose*
Goddu, Louis Adolore Oliver, Ph.G. (Mass. Coll. Phar.) *Winchester*
Hammond, Harry Weymouth . . . . . *Boston*
Hardwick, Sydney Curtis . . . . . *Quincy*
Henry, Thomas Francis . . . . . *Salem*
Hinchliffe, Frederick . . . . . *Clayville, N. Y.*
Houghton, Richard Henry . . . . . *E. Boston*
Hussey, William Francis . . . . . *Boston*
Janes, Arthur Percy . . . . . *Boston*
Kendricken, Joseph Thomas . . . . . *Boston*
Kelly, John M. . . . . *Dorchester*
Kelly, Harvey Augustine . . . . . *Dorchester*
Kennison, Frederick Marshman . . . . . *Boston*

Landers, George Bagnell . . . . . *Chelsea*
Long, Merritt Allen . . . . . *Manchester*
McCarthy, Eugene Justin . . . . . *Malden*
McCarthy, Francis Patrick . . . . . *Boston*
McLaughlin, John David . . . . . *E. Boston*
McMahon, Michael Francis Edward . . . . . *Worcester*
Mayrand, Engene . . . . . *Lowell*
Medalia, Leon Sam Abrahams . . . . . *Boston*
Murphy, Frederick Paul . . . . . *Lowell*
Murphy, Frederick Vincent . . . . . *Brockton*
Murphy, Anna Frances . . . . . *Nashua, N. H.*
Nolan, James Patrick Augustus . . . . . *Boston*
Noyes, William Nelson . . . . . *Portsmouth, N. H.*
Ober, Frank Roberts . . . . . *Northeast Harbor, Me.*
O'Brien, William Smith . . . . . *Marlboro*
Ordway, Mabel Dyer . . . . . *Jamaica Plain*
Palmer, Louis James . . . . . *Boston*
Plunkett, Harold Brabazon . . . . . *Lowell*
Rand, Anna Ethel . . . . . *Worcester*
Richardson, Horace Kimball . . . . . *Medford*
Roach, Alfred John . . . . . *Lowell*
Rochford, Grace Elizabeth . . . . . *Wellesley*
Rogers, Frank Norwood . . . . . *Dedham*
Rowe, Carl Allen . . . . . *Franklin, N. H.*
Shaw, Matthew Albert Neil . . . . . *Boston*
Scannell, James Joseph, A.B.(St. Bonaventure) *Roxbury*
Sherman, George Ernest . . . . . *Cambridge*
Simon, Arthur Leslie . . . . . *Waltham*
Smith, Myrtle . . . . . *Somerville*
Stacey, Winthrop Downing . . . . . *Charlestown*
Taylor, Maude Winnifred . . . . . *Hartford, Conn.*
Thompson, Harold Fenton . . . . . *Boston*
Tinkham, Oliver Goldsmith . . . . . *Weymouth*
Tucker, Arthur Wallace . . . . . *Chelsea*
Tyson, Forrest Clark . . . . . *Tipton, Mich.*
Wagner, Emma Juliet . . . . . *Boston*
Walsh, Joseph . . . . . *Augusta, Me.*
Walker, William Dacre . . . . . *Peabody*
Warren, Lizzie Maude . . . . . *New Boston, N. H.*
Weeden, Allen Augustus . . . . . *Providence, R. I.*
Whelan, Charles, B.S. (Dartmouth) . . . . . *Weymouth*
Winslow, Guy Monroe, Ph.D . . . . . *Newton*
Wood, Albert John . . . . . *Allston*

Young, Charles Henry . . . . . *Woburn*
Zaratt, Josefa . . . . . *San Juan, Porto Rico*

Second Year

Bagnall, Arthur Wallace . . . . . *Roslindale*
Baker, Myron Clarke . . . . . *Knoxville, Tenn.*
Barstow, Andrew Thaddeus . . . . . *E. Braintree*
Bates, Lewis Beals . . . . . *N. Weymouth*
Bazin, Edmond . . . . . *Haverhill*
Besse, Frank Adelbert, D.M.D. . . . . *Provincetown*
Bickford, Wallace Mellen . . . . . *Portland, Me.*
Bradbury, Walter Lyman . . . . . *Boston*
Brown, William James . . . . . *Boston*
Bruce, John Rufus . . . . . *E. Weymouth*
Butler, John Dennison . . . . . *Boston*
Caldwell, Joseph Davis . . . . . *Waltham*
Callahan, John Francis . . . . . *Pawtucket*
Campbell, William Marie . . . . . *Dorchester*
Carley, Frederick James . . . . . *Tewksbury*
Carr, Gladys Lydia . . . . . *Chelsea*
Carr, Dennis Henry . . . . . *Dorchester*
Chalmers, Hattie Elizabeth . . . . . *Hudson*
Coburn, Clarence Orrin . . . . . *Manchester, N. H.*
Cogan, Henry James . . . . . *Hyde Park*
Cole, Ralph Waldo Emerson . . . . . *Franklin Falls, N. H.*
Cotter, Edward Joseph . . . . . *Roxbury*
Cowan, Marion . . . . . *Lynn*
Crimmin, Philip Patrick . . . . . *Brockton*
Crowley, John Joseph . . . . . *Everett*
Cummings, John Francis . . . . . *Brockton*
David, Olier Joseph . . . . . *Lowell*
Davis, Ernest Leland . . . . . *Springfield*
Day, Cushman . . . . . *Boston*
Deacon, Thomas Irving . . . . . *Cambridge*
Derrick, Joseph Stephen . . . . . *Charlestown*
Doran, John Michael . . . . . *Boston*
Doonan, Henry Edward . . . . . *Wellesley*
Dougherty, William Joseph . . . . . *Manchester*
Eaton, Marland Hooper . . . . . *Beverly*
Fallon, Joseph Francis . . . . . *Brookline*
Felch, Lewis Perley . . . . . *Boston*
Fletcher, Arthur Stanton . . . . . *Waterville, Me.*
Fletcher, Christopher . . . . . *Chelsea*
Ford, Foster Studley . . . . . *N. Grafton*

Foss, Ralph Emery . . . . . *Peabody*
Foster, George Sanford . . . . . *Manchester, N. H.*
Gage, Arthur Tenney . . . . . *Winchester*
Gately, Mary Agatha Murray . . . . . *Boston*
George, Arial Wellington . . . . . *Boston*
Gibson, George William . . . . . *Chicopee*
Goldberg, Elias . . . . . *Boston*
Grainger, Joseph Francis . . . . . *Cambridge*
Greenwood, Austin Ellsworth . . . . . *Lowell*
Ham, Helen Willard . . . . . *Middleboro*
Harmon, Ernest Linwood . . . . . *Biddeford, Me.*
Harrington, Clifton Ward . . . . . *Hathorne*
Harrison, Columbus William . . . . . *Boston*
Hennessey, William Warren . . . . . *Salem*
Hermann, Louis Alfred . . . . . *Boston*
Higgins, George Vincent . . . . . *North Abington*
Holmes, George Winslow . . . . . *Belfast, Me.*
Hughes, Archibald William . . . . . *Providence, R. I.*
Innes, Carrie Louise . . . . . *Boston*
Kearney, Joseph Patrick . . . . . *Lowell*
Keenan, George Francis . . . . . *Boston*
Kelly, Louis Samuel . . . . . *Charlottetown, P. E. I.*
King, Arthur Wight . . . . . *Hyde Park*
Kingsbury, Walter Warren . . . . . *Walpole, N. H.*
Kirkpatrick, Gilbert Stanley . . . . . *Wilmington*
Klein, Isaac . . . . . *Boston*
Lilley, John Franklin . . . . . *New Bedford*
Looney, Edward Michael . . . . . *Salem*
Lougee, John Leroy . . . . . *Boston*
Luce, Leroy Alson . . . . . *Gaysville, Vt.*
Lynch, James Joseph . . . . . *So. Boston*
Lynch, William . . . . . *Boston*
McCarthy, Lawrence John . . . . . *Rockville, Conn.*
McCarthy, Timothy William . . . . . *Rockville, Conn.*
McCready, Leo Thomas . . . . . *Providence, R. I.*
McDonald, Louis Ronald . . . . . *Charlestown*
McGaffigan, Bernard Francis . . . . . *Charlestown*
MacGhee, Charles Maxwell . . . . . *Boston*
MacNeil, Charles Seward Jadis . . . . . *Boston*
MacPhail, John Gunn . . . . . *Boston*
Mahoney, Charles Frederick . . . . . *Boston*
Mahoney, Walter Francis . . . . . *Hudson*
Makller, Moses . . . . . *Boston*
Mara, Joseph Lawrence . . . . . *Boston*

Marlin, Anna Sarah . . . . . *Boston*
Marr, Ben Butler . . . . . *Wilmington*
Meehan, Patrick Joseph . . . . . *Lowell*
Mehan, Joseph Aloysius . . . . . *Lowell*
Monahan, John Terrence . . . . . *Hopkinton*
Morse, Irene May, A.M. . . . . *Laramie, Wyoming*
Murphy, John Michael . . . . . *Monson*
Nickerson, Mary Abbie . . . . . *Cohasset*
Nolan, Henry Stuart . . . . . *Somerville*
Peters, Solon Wilder . . . . . *Sterling*
Phillips, Richard Hornorhas . . . . . *Boston*
Pinner, Charles Francis . . . . . *Boston*
Pitkin, Edith Winifred . . . . . *Albany, N. Y.*
Raymond, Charles Stanley . . . . . *Providence, R. I.*
Reeves, William Arthur . . . . . *Lynn*
Regan, William Henry . . . . . *Boston*
Roughan, Charles Michael . . . . . *Collinsville*
Rushford, Edward Allan . . . . . *Salem*
Sanborn Mary Esther . . . . . *Brookline*
Segal, Jennie . . . . . *East Boston*
Sheehy, Richard William . . . . . *Weymouth*
Simms, Herbert Eugene . . . . . *Boston*
Spline, Robert Emmett . . . . . *Dorchester*
Stammers, Joseph Collins . . . . . *Boston*
Stevens, William Russell . . . . . *Marshfield*
Stone, William Livingstone . . . . . *Chelsea*
Sturnick, Frederick Michael . . . . . *Boston*
Sundin, Axel Kassemir Hildebrand . . . . . *Providence, R. I.*
Sweeney, Mary Agnes . . . . . *Nashua, N. H.*
Taylor, Roy Arnold . . . . . *Waltham*
Trottier, Arthur Ovilar . . . . . *Providence*
Warren, Thomas Francis . . . . . *Fall River*
Welles, Franklin . . . . . *Boston*
Wheaton, Horace Frank . . . . . *Cambridge*
Whipple, Lewis Allen . . . . . *Essex*
Williams, David Lawrence . . . . . *Boston*
Wood, Harold Abbott . . . . . *Brockton*
Young, Evangelin Wilson . . . . . *Brighton*

First Year

Adams, Letitia Douglas . . . . . *Cambridge*
Albro, Marion Louise . . . . . *Providence, R. I.*
Allen, George Bates . . . . . *Lowell*
Alleyne, James Douglas . . . . . *Boston*

Ballou, Ambrose Roche . . . . . *Quincy*
Barnard, Harold Hastings . . . . . *Groton*
Barrington, Edwin Russell . . . . . *Boston*
Bartlett, Fred Ai . . . . . *Melvins Mills, N. H.*
Bennett, Samuel Jackson . . . . . *Waterloo, Canada*
Berry, William Christopher . . . . . *Charlestown*
Besse, Florence Osmer . . . . . *Provincetown*
Blodgett, Merlin Freelan . . . . . *Milford, N. H.*
Bonelli, Raymond Peter . . . . . *E. Boston*
Bowker, Marion Esther . . . . . *Athol*
Brosnahan, Jeremiah Vincent . . . . . *So. Boston*
Brown, Louis Raymond, A.B. . . . . *Putnam, Conn.*
Burns, Richard Charles . . . . . *Lawrence*
Bussey, Joseph Henry . . . . . *E. Boston*
Cahill, Thomas Joseph . . . . . *Cambridge*
Cahir, Thomas Francis, Jr., ... *Cambridge*
Carroll, Arthur Everett . . . . . *Danvers*
Carroll, Joseph Arthur . . . . . *Dorchester*
Christian, Andrew Forest . . . . . *Cambridge*
Cleaves, Harrie Franklin . . . . . *Bar Harbor, Me.*
Connor, George Aloysius . . . . . *Cambridge*
Cook, James Henry . . . . . *Brookline*
Crowley, Jeremiah Alphonsus . . . . . *Boston*
Crowley, Robert Emmett, Jr. . . . . *Lowell*
Dainty, George Wood . . . . . *Somerville*
Daly, John Augustine . . . . . *Andover*
Daniels, Ora George, A.B. . . . . *Chelsea*
Dobson, William Marshall . . . . . *Duxbury*
Doherty, Philip Joseph . . . . . *Charlestown*
Donnell, Herbert Anthony . . . . . *Forest Hills*
Doonan, Henry Edward . . . . . *Wellesley*
Dunn, D. Moore . . . . . *Roxbury*
Dunn, Thomas Bercil . . . . . *Boston*
Drysdale, Ronald Scott . . . . . *Boston*
Ellison, Daniel James . . . . . *Central Falls, R. I.*
Fallon Thomas Francis . . . . . *Worcester*
Fitzpatrick, James Joseph . . . . . *Salem*
Flood, Ida Mae . . . . . *Clinton, Maine*
Forsyth, James Perkins . . . . . *Philadelphia, Pa.*
Friel, John Joseph . . . . . *Boston*
Gaffney, Mary Evangeline . . . . . *Salem*
Gardella, Bartholomew Anthony . . . . . *Boston*
Gates, Raymond Eugene . . . . . *E. Dedham*
George, Alvin . . . . . *Boston*

Gettings, James Henry . . . . . *Fall River*
Giovannetti, Humbert Adrian . . . . . *Port Morien, Cape Breton*
Glen, Cornelius Leonard . . . . . *Pawtucket, R. I.*
Glynn, William Clinton . . . . . *Clinton*
Haché, Henry Clement, M.D. . . . . *Somerville*
Hadley, Amos William . . . . . *Worcester*
Hanlon, David Edward . . . . . *Hyde Park*
Hatch, Ernest Downing . . . . . *Boston*
Herne, Leonard Garland . . . . . *Rockport*
Higgins, Aaron Locke . . . . . *Rockland*
Hill, Harry Joseph . . . . . *Boston*
Holway, Ernest Fletcher . . . . . *Cambridge*
Hopkins, Alice Josephine Biggs . . . . . *Chelsea*
Hopkins, George Richard . . . . . *Medford*
Howland, George Lewis . . . . . *Boston*
Hunt, William Elliot . . . . . *Bridgewater*
Irving, Harry . . . . . *Providence, R. I.*
Kelley, Edward Paul . . . . . *Woburn*
Kelly, Alice Elizabeth . . . . . *Dorchester*
Kerrigan, Joseph Henry . . . . . *Woburn*
Knudson, Marie Mette . . . . . *Waltham*
Lanpher, Howard Arthur . . . . . *Roxbury*
Light, Everett Elmer . . . . . *Waterville, Me.*
Lima, Joseph Jacome Travossos . . . . . *Fall River*
Lynch, Daniel Lawrence . . . . . *Jamaica Plain*
Lyons, Frederick Lawrence . . . . . *Charlestown*
McColgan, John Cornelius . . . . . *E. Boston*
McCarthy, Charles Andrew . . . . . *Boston*
McConville, Frederick Walter . . . . . *Boston*
McDonald, Ronald John . . . . . *Cambridge*
McIntire, Frederick Joseph . . . . . *Lynn*
MacPherson, Lauchlin . . . . . *Upper So. River, N. S.*
McQuade, Lewis Steele . . . . . *Dorchester*
McTiernan, James Michael . . . . . *W. Quincy*
Maglathlin, Leon Edward . . . . . *West Bridgewater*
Mains, Herbert Llewellyn . . . . . *Danvers*
Manley, Francis Michael . . . . . *Brookline*
Mannix, Louis Edward . . . . . *Worcester*
Margot, Frederick Eugene . . . . . *Jamaica Plain*
Marion, Otis Daniel . . . . . *Jamaica Plain*
Maroney, Joseph Patrick . . . . . *Franklin*
Marr, Myron Whitmore . . . . . *Dorchester*
Martin, John Foley . . . . . *Boston*
Merrifield, Chester Arthur . . . . . *Stoneham*

Mintz, Samuel Charles . . . . . *E. Boston*
Mitchell, Howard Dykeman . . . . . *Chelsea*
Moran, Edmund Francis . . . . . *Chelsea*
Morgan, Charles Russell . . . . . *Allston*
Moulton, Sam Russell . . . . . *Newton Highlands*
Myers, Edmund . . . . . *Roxbury*
Nettle, Paul . . . . . *Jamaica Plain*
O'Brien, Carl Robert . . . . . *Chelsea*
O'Connell, Lucy Jane Dorothy . . . . . *Auburn, Me.*
Paine, Harland Lloyd . . . . . *Rockland*
Patch, Charles Edwin . . . . . *Arlington*
Pendexter, Thomas Merritt . . . . . *Amesbury*
Perkins, Grace Katherine . . . . . *Groveton, N. H.*
Perrault, Joseph Napoleon . . . . . *Manchester, N. H.*
Pittinger, Lee Ross, D.D.S. . . . . *Boston*
Poole, Lawrence Earl . . . . . *Rockland*
Praino, Gaetano . . . . . *Boston*
Pratt, William Porter . . . . . *E. Weymouth*
Ralph, Wilbur Booth . . . . . *Utica, N. Y.*
Reynolds, Carl Edgar . . . . . *Weymouth Heights*
Richardson, Carl Engene . . . . . *Marlboro, N. H.*
Ricker, Carroll Henry . . . . . *Boston*
Robinson, George . . . . . *Concord, N. H.*
Roseman, Benjamin Franklin . . . . . *Chelsea*
Ross, John Robert . . . . . *Roxbury*
Saunders, James Augustine . . . . . *Lowell*
Sawyer, Earle Dewey . . . . . *Bridgeton, Me.*
Shapiro, Charles . . . . . *Boston*
Shaw, John Joseph, Jr. . . . . *Providence, R. I.*
Shaw, John William . . . . . *Amesbury*
Shealey, Michael Joseph . . . . . *Brockton*
Sheehan, George Lucius . . . . . *Franklin Falls, N. H.*
Silverman, David Russell . . . . . *Boston*
Slattery, Joseph Francis . . . . . *Cliftondale*
Slattery, Mary Elizabeth . . . . . *Cliftondale*
Smith, Fred Waite . . . . . *Dixfield, Me.*
Spaulding, John Doliver . . . . . *Mansfield*
Stott, Ardenne Albert . . . . . *Reading*
Suitor, Henry Albert . . . . . *Barton, Vt.*
Sullivan, Edward Vincent . . . . . *Cambridge*
Sullivan, George Francis . . . . . *Worcester*
Taft, Annie Elzina . . . . . *Chestnut Hill*
Talbot, Frances Louise . . . . . *Peabody*

Tighe, Eleanor Marie . . . . . *Keene, N. H.*
Troy, Alice Gertrude . . . . . *Worcester*
Wallace, James Henry . . . . . *Clinton*
Wallingford, Harry Melvin . . . . . *Lewiston, Me.*
Watjen, Henry Ernest . . . . . *Pawtucket, R. I.*
Werthen, Harry Edson . . . . . *Boston*
White, Frank Warren . . . . . *Arlington*
Wilson, Edmund Winifred . . . . . *Waltham*
Witham, Ernest Clair . . . . . *Westbrook, Me.*
Wright, Francis Joseph . . . . . *Roxbury*
Wright, William Frank . . . . . *Roxbury*
Young, Water Harding . . . . . *E. Dedham*

Special Students

Ceconi, John Aloysius . . . . . *Dorchester*
Chipman, Harry Edgar Harrison . . . . . *Arlington Heights*
Coffin, Harriet Freeman . . . . . *E. Orange, N. J.*
Currier, Richard Doe . . . . . *Boston*
Hardwick, Frederick Veazie . . . . . *Quincy*
Higgins, Robina Roche . . . . . *Concord, N. H.*
Horne, Lester Wallace . . . . . *Norway, Me.*
Kelly, John Joseph . . . . . *Dorchester*
Kendall, George Ralph . . . . . *Brentwood, N. H.*
O'Brien, William Francis . . . . . *Providence, R. I.*

Dental School

[P. O. Address, 416 Huntington Ave., Boston, Mass.]

Senior Class

Ash, Henry . . . . . *No. Weymouth*
Askowith, Charles . . . . . *Boston*
Barron, Wilson Darling . . . . . *Dorchester*
Bodge, Frederick Garfield . . . . . *Tamworth, N. H.*
Bonney, Theresa Eva . . . . . *Somerville*
Brigham, Ernest Phipps . . . . . *Westboro*
Brooks, Ernest Robbin . . . . . *Northfield, Vt.*
Brown, Charles Drew . . . . . *Somerville*
Bunker, Jane Graupner . . . . . *New York, N. Y.*
Centervall, Ivan Alexis Teofil . . . . . *Boston*
Chester, Carey Roscoe . . . . . *Malden*
Collins, Stephen Bartholomew . . . . . *Avon*
Davis, Joseph Benjamin . . . . . *Bridgton, Me.*
Davis, Myrton Omer . . . . . *Worcester*
Dearing, Dana Emerson . . . . . *Randolph, Vt.*
Felix, Arthur Mark, B.A. . . . . *N. Adams*
Fenelon, James Joseph . . . . . *E. Boston*
Francis, Melville F. . . . . *Malden*
Gibbons, John Joseph, Jr. . . . . *Clinton*
Gilpatric, Edgar Frank . . . . . *Biddeford, Me.*
Goodrich, Lynn Merton . . . . . *Oakland, Me.*
Grant, Walter Henry . . . . . *Cambridge*
Harrison, Henry Hersey . . . . . *Boston*
Hart, Frederick James . . . . . *Lowell*
Hennessy, Thomas, Jr. . . . . *Boston*
Jenkins, George Albert . . . . . *N. Weymouth*
Johnson, Alfred LeRoy . . . . . *Shelburne Falls*
Kennedy, John Joseph . . . . . *Chicopee*
King, Jeanette Emma . . . . . *Boston*
LaBelle, Wilfred Mathias . . . . . *Holyoke*
Lunt, Wilbur True . . . . . *Rochester, N. H.*
McKinnon, John Russell . . . . . *Roxbury*
Manster, James Siemel . . . . . *Roxbury*
Montgomery, Frank Willis . . . . . *N. Adams.*
Moran, Philip Frederick . . . . . *Somerville*
Mullin, David Joseph . . . . . *St. John, N. B.*

Osborne, Shelley Barnes . . . . . *Uxbridge*
Perrault, Oscar Leon . . . . . *N. Brookfield*
Pike, Ezra Barker, Jr. . . . . *Boston*
Reynolds, Richard Henry . . . . . *Woburn*
Riley, John Joseph . . . . . *Rockland*
Rockett, Joseph Bernard . . . . . *Dorchester*
Shaughnessy, Emma Elizabeth . . . . . *Newtonville*
Smith, Clarence Endicott . . . . . *Fredericton Junc., N. B.*
Smith, Harry Monford . . . . . *E. Boston*
Smith, Henry Edwin . . . . . *Boston*
Stetson, Henry Morgan . . . . . *Cohasset*
Story, Ernest Sherman . . . . . *Salem*
Streijffert, Thure Gustaf . . . . . *Boston*
Thomas, Charles Arthur . . . . . *Somerville*
Thorburn, Stanley Burton . . . . . *Boston*
Ufford, Eugene Urbane . . . . . *Springfield*
Wells, Ernest Leavitt . . . . . *Waltham*
Wheeler, George Gilman . . . . . *Providence, R. I.*
Whittredge, Eugene Alfred . . . . . *Foxcroft, Me.*
Wilkinson, Alvin Thomas . . . . . *Providence, R. I.*
Williams, John Hod . . . . . *Norwich, Conn.*

Also Candidates for the Degree

Atwood, Ira Osmond . . . . . *N. Attleboro*
Breslin, John Lawrence . . . . . *Woburn*
Bruce, Barnett . . . . . *Portland, Me.*
Butler, Charles Carter . . . . . *Pittsfield*
Chisholm, Lester Dearborn . . . . . *Bridgewater*
Clarke, Charles Peter . . . . . *Ayer*
Dowd, Thomas Patrick . . . . . *S. Natick*
Fowler, Miles Hartley . . . . . *Dorchester*
Gallagher, Charles Aloysius . . . . . *Boston*
Gehrung, Arthur Francis . . . . . *N. Attleboro*
Gobie, William Allen . . . . . *Woodstock, Vt.*
Gowen, Charles Edwin . . . . . *Dover, N. H.*
Hodgdon, Alby Emerson Paige . . . . . *E. Foxboro*
Jewett, Elton Sumner . . . . . *Boston*
Kiley, Robert Delury . . . . . *Salem*
Luce, Maurice Garfield . . . . . *Haverhill*
McCarthy, Justin Lawrence . . . . . *Ashland*
McGourty, Frederick William . . . . . *Worcester*
MacKeon, John Francis . . . . . *Taunton*
Mignault, William Theodore . . . . . *S. Boston*
Preston, Nathaniel Meservey . . . . . *New Hampton, N. H.*

Romanow, Morris . . . . . *W. Somerville*
Stegelman, Alfred Gatzor . . . . . *Lewiston, Me.*
Whitehouse, Frank Harrison Gower . . . . *Providence, R. I.*
Young, John Maurice . . . . . *Rockland*

Junior Class.

Blagdon, Joseph Michael . . . . . *Charlestown*
Brenan, Henry Edward . . . . . *Boston*
Carlson, Bertel Gustaf . . . . . *Worcester*
Caswell, Fred. Calvin . . . . . *Brockton*
Cole, Charles Cummings . . . . . *Boston*
Dary, Lewis Brown . . . . . *Pawtucket, R. I.*
Dickinson, George Granville Parker . . . . *Harvard*
Dowd, Harry Irving . . . . . *Torrington, Conn.*
Dunleavy, John Eugène . . . . . *Uxbridge*
Fanning, Arthur Oscar . . . . . *Salem*
Finnegan, George Francis . . . . . *Waltham*
Gately, John Francis . . . . . *No. Grafton*
Gould, Arthur Richard . . . . . *Brockton*
Hill, Hugh Thomas . . . . . *Boston*
Horn, Robert . . . . . *Southville*
McGlew, Charles Ketlewell . . . . . *Salem*
McTernen, Malcom Bodwell . . . . . *Andover*
Mahoney, James Francis . . . . . *Waltham*
Marr, Thomas Edward . . . . . *Waltham*
Mullin, Charles Samuel . . . . . *Cambridge*
Nash, George Page . . . . . *Lewiston, Me.*
Noonan, Kaen Aloysius . . . . . *Roxbury*
Potter, George Edwin . . . . . *Greenwood*
Roy, Emile Alfred . . . . . *Mittineague*
Seagrave, Chauncey Wilcox . . . . . *Uxbridge*
Talty, Joseph Edward . . . . . *Woburn*
Tuttle, Fred Wilbur . . . . . *Boston*
White, Henry Anson . . . . . *Dorchester*

Freshmen

Bacon, Charles Harland . . . . . *Plainville*
Barry, Henry Adams . . . . . *Salem*
Bigelow, Frank Arthur . . . . . *Whitinsville*
Bonnell, Fenwick Clifton . . . . . *St. John, N. B.*
Boyd, Walter Lawrence . . . . . *Cambridge*
Brigham, Arthur Winsor . . . . . *Boston*
Chapman, Frank H. . . . . *Meredith, N. H.*
Cheever, Annie Frances . . . . . *N. Attleboro*

Conley, George Lawrence . . . . . *Brockton*
Connell, Grover Joseph . . . . . *Dorchester*
Connolly, Daniel Leo . . . . . *Boston*
Cook, William Henry . . . . . *Taunton*
Costello, Richard Joseph . . . . . *Cambridge*
Crawford, Arthur Archibald . . . . . *Cambridge*
Dickey, Gilmore Colby . . . . . *Boston*
Dunham, Thomas Denny . . . . . *Barre, Vt.*
Eaton, William Henry . . . . . *Somerville*
Fitzgerald, Francis Joseph . . . . . *Somerville*
Galvin, Thomas Edward . . . . . *Boston*
Grant, Ethel Edna . . . . . *Boston*
Harding, Arthur Clement . . . . . *Cambridge*
Hickey, Daniel Francis . . . . . *Boston*
Ingalls, Byron Grayson . . . . . *Whitinsville*
Jones, Warren Reese . . . . . *Stoneham*
Keefe, Daniel Edward . . . . . *Athol*
Kensell, Frederic Albion . . . . . *Whitefield, Me.*
Kerrigan, Joseph Patrick . . . . . *Cambridge*
King, Frank Collin . . . . . *Chipman, N. B.*
LaFlamme, Joseph Leopold . . . . . *Cambridge*
Lambert, Horace Porter . . . . . *Chelsea*
Lowe, Arthur Stanley . . . . . *Springfield*
Lyons, Joseph Vincent . . . . . *So. Boston*
Lyons, James David . . . . . *Hamilton, N. Y.*
MacCaleb, Ernest Wonson . . . . . *Gloucester*
MacCorry, Henry Stuart . . . . . *Boston*
Mahan, Joseph Ambrose . . . . . *Natick*
Mallett, Francis Ernest . . . . . *Chelsea*
Martin, Arthur Simeon . . . . . *Manchester*
Massicotte, Joseph, Jr. . . . . *Webster*
McDonell, Fred William . . . . . *Montreal, P. Q.*
McGee, Timothy Lawrence . . . . . *Worcester*
McGrath, George Henry . . . . . *Weymouth*
McIntosh, Arthur Herbert . . . . . *Melrose*
Melanson, Thomas . . . . . *Corberrie, N. S.*
Miett, Elmer Peter . . . . . *Haverhill*
Montgomery, William Edward . . . . . *Natick*
Morgan, Daniel Joseph . . . . . *So. Boston*
Murphy, George Arthur . . . . . *St. John, N. B.*
Murphy, James Patrick . . . . . *Natick*
Neary, John Thomas . . . . . *Southboro*
Neely, Durostus Wesley . . . . . *Somerville*

Oliver, Alton Elihu . . . . . *So. Braintree*
Pierce, William T. . . . . *Gardiner, Me.*
Phillips, Warren Luscomb . . . . . *Salem*
Pofcher, Simon . . . . . *Everett*
Richardson, Henze Sumner . . . . . *Mt. Desert, Me.*
Ricker, Albert Winslow . . . . . *Cochituate*
Riley, William Henry . . . . . *Woodstock, Vt.*
Riordan, Warren Paul . . . . . *Lowell*
Risegari, Hector George . . . . . *Boston*
Robbins, Walter Bartlett . . . . . *So. Braintree*
Rock, Timothy Francis . . . . . *Nashua, N. H*
Ross, Philip Knight . . . . . *Gorham, N. H.*
Searle, Stephen Nourse . . . . . *Bellows Falls, Vt.*
Stuart, Charles Sprague . . . . . *So. Paris, Me.*
Tingley, George Wright . . . . . *Moncton, N. B.*
Tuttle, Howard Knowlton . . . . . *So. Acton*
Underwood, Edith Marion . . . . . *Allston*
Watson, Scott Emery . . . . . *Stoneham*
Wheeler, Ralph Deming . . . . . *Pittsfield*
White, Paul Gardiner . . . . . *Boston*
Whitney, Carl Harvey . . . . . *Somerville*
Wing, Ernest Wellman . . . . . *Hyde Park*

Special Students

Brosnahan, James Leo . . . . . *Boston*
Fraher, Michael Joseph . . . . . *So. Boston*
Frost, William Mason . . . . . *Haverhill*
Hackett, Ephriam Russell . . . . . *Kingfield, Me.*
McInnes, George Francis . . . . . *Cambridgeport*
Taylor, Ernest Bossuet . . . . . *Waltham*

Post-Graduate Course

Dixon, Joseph Reynolds, D.M.D. . . . . *Boston*

The Summer School at Tufts College*

d'Amaral, Joseph, *Mathematics*
Angel, Frank James, *English*
Frost, Jennie Clifton, *English* . . . . . Arlington
Galarneau, Dennis Camille Amédée, *English*
Hadley, Norris Edmund, *Mathematics*
Lunt, Eliza Hosmer, *English* . . . . . 50 Curtis St., W. Somerville
Mason, Joseph Eaton, *English* . . . . . Chicago, Ill.
Maulsby, Harriet Wehner, *English* . . . . 80 Curtis St., W. Somerville
Maulsby, Lillian Ayer, *English* . . . . . 80 Curtis St., W. Somerville
Proctor, Fred Willis, *Mathematics*
Raspe, Otto Steinehofer, *English*
Todd, Arthur Oswald, *Mathematics*
Wells, Gladys, *Mathematics* . . . . . Troy, N. Y.

* When specific address is not given, the students are registered undergraduates.

Summary

CORPS OF INSTRUCTION

Emeritus	2	
President and Professors	49	
Assistant Professors	15	
Demonstrators	3	
Instructors	47	
Lecturers	7	
Assistants	27	
Laboratory Assistants	25	
Total engaged in work of instruction	—	175
Other Officers, not previously counted		11

STUDENTS

COLLEGE OF LETTERS:		
Graduate	6	
Senior	62	
Junior	62	
Sophomore	75	
Freshman	91	
Special	13	—309
DIVINITY SCHOOL:		
Fourth Year	1	
Third Year	4	
Second Year	5	
Special	2	
FIVE-YEAR A.B.—B.D. COURSE:		
Third Year	4	
Second Year	1	— 17
MEDICAL SCHOOL:		
Fourth Year	45	
Third Year	77	
Second Year	122	
First Year	147	
Special	10	—401
DENTAL SCHOOL:		
Graduate	1	
Senior	82	
Junior	28	
Freshman	73	
Special	6	—190
SUMMER SCHOOL AT TUFTS COLLEGE		13
BROMFIELD-PEARSON SCHOOL		20
Total number of students		950
Names appearing twice		8

The following persons carried on work at the Harpswell Laboratory, during the Summer of 1903:—

George A. Bates, D.D.S.
Professor of Histology, Tufts College Medical School

Dorothy M. T. Brown
Special Student, Tufts College

Frank S. Collins
Malden, Mass.

Emily Ray Gregory, Ph.D.
Professor of Biology, Wells College

J. S. Kingsley, Sc.D.
Professor of Biology, Tufts College

F. D. Lambert
Instructor in Biology, Tufts College

Lulu Packer
Newark, New Jersey

Grace O. Peterson, A.B.
East Boston, Mass.

Edward L. Rice, Ph.D.
Professor of Biology, Ohio Wesleyan University

Fred W. Thyng
Olmstead Fellow in Natural History, Tufts College

Borden S. Veeder
Student, University of Pennsylvania Medical School

C. B. Wilson
Professor of Natural Science, Westfield Normal School

Naohide Yutsu, Ragakushi
Fellow in Biology, Columbia University

DEGREES AND HONORS

1902-1903

Forty-Seventh Annual Commencement

June 17, 1903

DEGREES CONFERRED

HONORARY

Doctors of Laws

CARROLL DAVIDSON WRIGHT
HENRY CLAY IDE
CHARLES HIAL DARLING

Doctors of Sacred Theology

JAMES SHRIGLEY
CHARLES HUNNICUTT PUFFER
VINCENT EATON TOMLINSON
JAMES FRANCIS ALBION

Doctors of Letters

TIMOTHY THOMPSON SAWYER
WINTHROP LIPPITT MARVIN

Masters of Arts

WILLIAM OSCAR CORNELL
DAVID CUMMINGS
EDWARD HALL COLE
JAMES D. PERKINS
BENJAMIN WHITTEMORE
HENRY HEMON WILLIAMS
PAYSON SMITH

IN COURSE

Bachelors of Arts

BLANCHE LOUISE BRUCE
EDITH LINWOOD BUSH (with Honors in Mathematics and in French)
WINBURN SCOTT CANNELL
CHARLES EDWARD CHAPMAN (extra ordinem)
ARTHUR WILLIAM COOLIDGE (with Honors in History and Public Law)
ISABEL HALL COOMBS (with Honorable Mention in History and Public Law and in German)
JOHN ALBERT COUSENS (extra ordinem)
OLIVE ARNOLD DAME (with Honors in English and Honorable Mention in History and Public Law)
LOUISE MELINDA FARNSWORTH (with Honors in German and Honorable Mention in English)
GERTRUDE ISABELLE FISHER

CARRIE EDWARDS FOX
EDNA MARY FRIEND
JULIA FRANCES GIBBS (with Honors in Greek)
PHILIP MESERVE HAYDEN (with Honors in Latin)
HARRY ADAMS HERSEY (with Honorable Mention in English)
BEULAH SINCLAIR HIXON (with Honors in Mathematics)
MARY WINSHIP KINGSLEY (with Honors in History and Public Law)
ETHEL FRANCES LITTLEFIELD (with Honors in Greek)
CHARLOTTE RAYMOND LOWELL
LENA ABBIE LYONS (with Honors in Mathematics)
GUY ELWOOD MARION
HARRY TIRRELL MERRITT
ETHEL ALMIRA MOORE (with Honors in French)
ARTHUR MURPHY, JR.
ROBERT EDWARD NASON
LAWRENCE MARSDEN PRICE (with Honorable Mention in History and Public Law)
ETHYL WINNIFRED PUFFER (with Honors in German)
OLIVE KATHARINE RYAN (with Honors in Greek)
STANLEY GATES SPEAR, B.D.
CHESTER BRADSTREET STORY
CHANDLER MASON WOOD (with Honors in History and Public Law and Honorable Mention in Philosophy)

Bachelors of Philosophy

HANNAH CECILE CROWELL
HENRY PALMER LEWIS
HARRY DELUCE LINSCOTT

Bachelors of Science in Civil Engineering

RALPH ELMORE KIMBALL
OREN MCKENNEY MOULTON (with Honorable Mention in Civil Engineering)

Bachelors of Science in Electrical Engineering

ASHTON BARDOLPH COOPER
SAMUEL THOMAS HALL
THOMAS SAWYER KNIGHT
LEONARD LAURIAT
HARRY STANLEY PAGE

Bachelor of Science in Biology

OSCAR SLADE CREELEY

Bachelor of Science in General Science

CLARENCE PRESCOTT BEARCE

Bachelors of Sacred Theology

CHARLES MASSON ANDREWS, B.S.
JOHN MERRILL PAIGE, B.D.

Doctors of Medicine

CHARLES WILSON AVERELL, A.M.
IDA BELLE BAKER
LILY OWEN BAKER
GEORGE WASHINGTON BARRETT
CHARLES EDWARD BUCK, PH.G.
GEORGE KITTREDGE BUTTERFIELD
BERTRAM HORACE CASWELL
FRANCIS BERNARD CONWAY
MAURICE EDWARD COTTER
RICHARD COULSON
MARY SIBYLLA CROSWELL, A.B. (cum laude)
JEREMIAH JAMES DALY
GEORGE WILLIAM DERRICK
CHARLES HARLAND DOWNING (cum laude)
EOLINE BEATRICE CHURCH DUBOIS
CREIGHTON FERGUSON
PATRICK JOSEPH FLEMING
GEORGE HARTLEY GORHAM
MARY ELIZABETH HALSALL
FRANK EUGENE HASKINS, PH.G.
CHARLES MICHAEL JACOBS
JAMES HENRY JOYCE
WILLIAM BASIL KEELER
ISABELLA DICKIESON KERR
HENRY GLOVER LANGWORTHY
WILLIAM FRANCIS LAWTON
FAITH CURTIS MEDLAR
FRANK HENRY McELROY
EDMUND JOHNSON McNEIL, JR.
HELEN ABBOTT MICHAEL
ETHEL SUSANNA MITCHELL
JOHN AMBROSE MONAHAN
EDWARD MARTIN MURPHY
LORETTA JOY O'BRIEN
JOHN PARR (cum laude)
CHESTER ALPHEUS PAULL
JOHN CORBIN PIERSON
FREDERICK REIS
FLORENCE FRANCES RICE

WILLIAM LITTLEFIELD RIPLEY (cum laude)
WILLIAM MILTON ROSE
THOMAS JOHN SCANLAN
WILLIAM JOSEPH SHEEHAN
ELIZABETH MARY STICKNEY (cum laude)
FRANK ALOYSIUS SULLIVAN
HORACE CHENEY SWAN (cum laude)
STEPHEN FRANCIS THURBER
ANNA TOPAZ
JAMES HENRY TURNER
BENIZON G. WERNICK
LOUIS FREDERICK WHEATLEY
JOHN AUGUSTUS WHITTLE (cum laude)

Doctors of Dental Medicine

HARRY PRESCOTT ALLEN
CARRIE ISABELLE HOUGH BENCE
BOYD FRANKLIN BOWLES
WILLIAM LOWELL CARGILL
GEORGE WILLIAM CARPENTER
CHARLES REDMAN COLE
JOSEPH REYNOLDS DIXON
JOHN HENRY DOOLEY
ARTHUR WILLIAM DOUBLEDAY
WILLIAM SNOW DOW
HARRY ALEXANDER DRAFFIN
OLIVER KENDALL P. DURGIN
EDWARD FALL
ROBERT FARQUHAR, JR.
CURTIS WILLIAM FARRINGTON
FRANK JOSEPH GILDAY
HARRY MYERS GOKEY
FREDERICK THOMAS GROGAN
HENRY TAYLOR HARPIN
LESLIE WOODBURY HARRIS
GRACE MAUDE HOUGH
ROBERT CRAWFORD JAMIESON
VARNEY ALBERT KELLEY
FRANCIS JESSE LANIGAN
JAMES LAWTON
ANTHONY JACOME TRAVASSOS LIMA
BURT EUGENE LOGWOOD
GEORGE EDWARD MAHONEY
WALTER COURTLANDT MASON

FRANK BRUCE MILES
JAMES O'BRIEN, JR.
IRVING ERSKINE PENDLETON
CLARENCE ALBERT PETTENGILL, B.S.
FRANCIS XAVIER QUINN
SIDNEY BURT SARGENT
GEORGE MAURICE SHAW
JOSEPH WILLIAM SHAY
JAMES HENRY SHILLINGTON
HARRY MANOOG SHOOSHAN
FRANK WELLS SPROUL
ODBER WELSLEY STAPLES
JOSEPH SNOW STETSON
HOWARD LESTER THORBURN
EDWARD WILLIAM TOBIN
HAROLD SMITH VILES
WINFRED FRANCIS WESCOTT
MORSE WIGHTMAN
JOHN JOSEPH WREN

Masters of Arts

VALERIA STONE GOODENOW, A.B. (Biology)
MARY WINSHIP KINGSLEY (History and Public Law)
ETHEL FRANCES LITTLEFIELD (Greek)
LAWRENCE MARSDEN PRICE (History and Public Law)
FRED WILBUR THYNG, A.B. (Biology)
MARIAN LUCY TITUS, A.B. (English)
CHANDLER MASON WOOD (History and Public Law)

Master of Science

ROBERT HAYWARD PARKE, B.S.

Commencement Parts

ARTHUR WILLIAM COOLIDGE, Cand. A.B.: "Tolerence or Indifference?"

CLARENCE ALBERT PETTENGILL, Cand. D.M.D.: "Asepsis in Dentistry."

OREN McKENNEY MOULTON, Cand. B.S.: "The Proposed Improvement on the Charles River."

MARY WINSHIP KINGSLEY, Cand. A.B.: "Early Missionaries in New France."

GEORGE WILLIAM DERRICK, Cand. M.D.: "The Sanatorium in the Treatment of Tuberculosis."

CHANDLER MASON WOOD, Cand. A.B.: "The Declaration of Independence One Hundred Years After."

Awards of Prizes, 1902-1903

Goddard Prize in Latin

GUSSANDA COUNTWAY

Goddard Prize in Mathematics

EVA LILLIAN CHANDLER

Prize Scholarship of the Class of 1898

RAYMOND KURTZ MORLEY

Winners of Prizes in the Annual Debate

THE KNOWLTON DEBATING CLUB

Best Individual Debater

CHANDLER MASON WOOD

Rhetorical Prizes

First Division

ROBERT WILLIAM HILL (1)
PERCY SYLVESTER PRINCE (2)

Second Division

LEON RYDER MAXWELL (1)
BERTHA LOUISE COMSTOCK (2)

Third Division

CLARENCE ELMORE WATKINS (1)
CHESTER BRADSTREET STORY (2)

Greenwood Prizes in Oratory in the Divinity School

GEORGE ARTHUR MILLER
CHARLES MASSON ANDREWS
SIDNEY JOEL WILLIS

TUFTS COLLEGE CATALOGUE

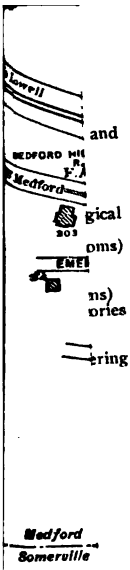
1904-1905

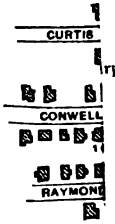
Published monthly, from December to June inclusive, at Tufts College, Mass., by the Trustees of Tufts College. Copies may be had by addressing the Secretary, HARRY G. CHASE, Tufts College, Mass.

☞ The post-office address of the College of Letters, the Divinity School, the Department of Engineering, and the Bromfield-Pearson School, is TUFTS COLLEGE, MASS.

The address of the Medical and Dental Schools is 416-430 HUNTINGTON AVENUE, BOSTON, MASS.

TUFTS COLLEGE CATALOGUE





Rail-
ivision
s from

dences

Tufts College Publications
New Series, Vol. V, No. 1

CATALOGUE

OF

TUFTS COLLEGE

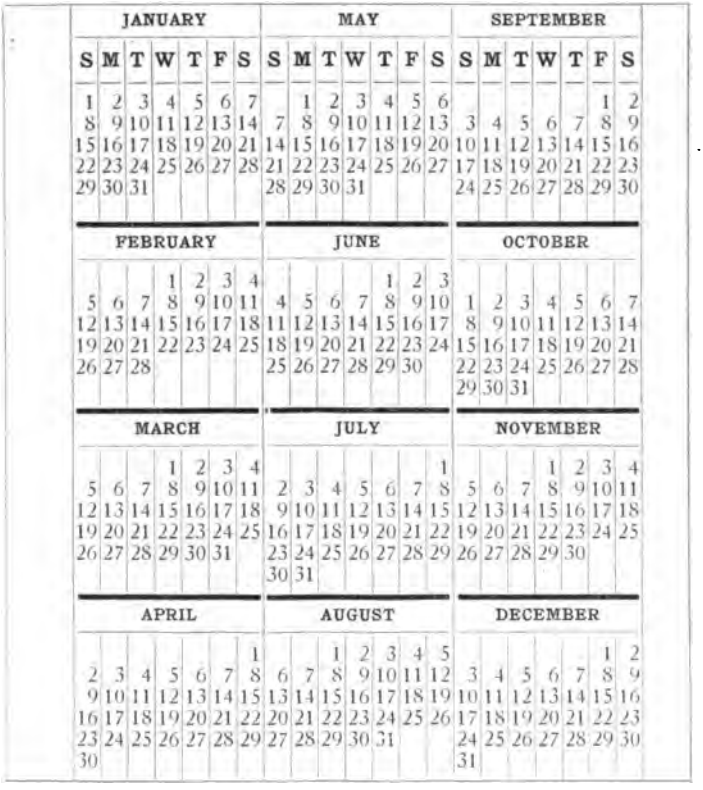
1904–1905

Published in December, 1904, by the Trustees of Tufts College

Entered at the Post-Office at Tufts College, Mass.
as Second Class Matter

THE TUFTS COLLEGE PRESS

Calendar — 1905



JANUARY						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

FEBRUARY						
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

MARCH						
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

APRIL						
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

MAY						
		1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

JUNE						
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

JULY						
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

AUGUST						
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

SEPTEMBER						
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

OCTOBER						
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

NOVEMBER						
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

DECEMBER						
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Tufts College is a railway station four miles from Boston on the Southern Division of the Boston and Maine Railroad. It is also accessible from Boston by electric cars. The post-office address is — TUFTS COLLEGE, MASS.

Contents

PAGE

PLAN OF THE COLLEGE GROUNDS (next to front cover)

CALENDAR 3

HISTORICAL SKETCH 7

The College Charter 13

Constitution of the Board of Overseers 14

ADMINISTRATION

TRUSTEES 19

OVERSEERS 20

BOARDS OF VISITORS 21

OFFICERS OF INSTRUCTION AND GOVERNMENT 22

Proctors 33

Russell Lecturer 33

Editors of Tufts College Studies . 33

Curators of Buildings 33

FACULTY OF ARTS AND SCIENCES

Standing Committees 34

COLLEGE OF LETTERS

FACULTY OF THE COLLEGE OF LETTERS 37

Committee on Promotions 38

Committee on Curriculum 38

Requirements for Admission 39

The Primary Group 41

The Secondary Group 45

General Information relating to Admission 51

REQUIREMENTS FOR DEGREES . . . 53

For A.B. 53

For B.S. 55

DEPARTMENTS OF INSTRUCTION (Courses in Liberal Arts) 57

Major Departments 57

English 58

Oratory 60

German 61

French 63

Italian 64

Latin 64

Greek 66

Classical Archaeology 68

Hebrew 69

Philosophy 69

PAGE

Pedagogics 72

History and Public Law 72

Political Science 76

Mathematics 78

Physics 79

Chemistry 81

Biology 84

Geology 86

Mineralogy 87

Drawing and Shopwork 87

Civil and Mechanical Engineering . 89

Electrical Engineering 91

Music 91

The Fine Arts 93

Physical Training 93

TABULAR VIEW OF PROGRAM HOURS 96

COURSES IN SCIENCE (Leading to Degree of B.S.) 101

General Science 101

Biology 103

Medical Preparatory 103

Chemistry 104

DEPARTMENT OF ENGINEERING

Faculty of the Department of Engineering 109

Committee on Promotions 110

General Information 111

Expenses 112

A.B. and B.S. in Five Years 113

Engineering Courses 115

Civil Engineering 116

Mechanical Engineering 118

Electrical Engineering 120

Chemical Engineering 122

Mathematics 124

Drawing 126

Shopwork 128

Chemistry 130

Physics and Electricity 132

Engineering—Civil and Mechanical 136

English 142

Modern Languages 144

Political Economy 144

Physical Training 144

TABULAR PROGRAM IN ENGINEERING 146

PAGE

GRADUATE DEPARTMENT

Faculty of the Graduate Department 152
Standing Committees 152
Instruction 153
Degrees 153
Departments open for A.M. 155
Departments open for Ph.D. . . . 160
Fellowships 161
Scholarships 162
Tuition 162
BUILDINGS AND EQUIPMENT 163
GENERAL INFORMATION 169
Religious Observances 169
Tufts College Studies 169
Registration 170
Program 172
Promotion 173
Major Subjects 173
Athletics 173
Admission from other Colleges . . . 174
Special Students 174
Terms and Vacations 174
Absences 175
Expenses 176
Office Hours 178
Scholarships and Other Aids 178
Prizes 182
Committee of Information 183
Honors and Degrees 184

DIVINITY SCHOOL

FACULTY OF THE DIVINITY SCHOOL 189
Non-Resident Lecturers 190
Committee on Promotions 190
CONDITIONS OF ADMISSION 191
Requirements for B.D. 191
DEPARTMENTS OF INSTRUCTION . . 193
SUMMARY 202
GENERAL INFORMATION 204
EXPENSES AND AIDS 205

MEDICAL SCHOOL

FACULTY OF THE MEDICAL SCHOOL 209
Other Instructors 211
Laboratory Assistants 214
Standing Committees 214
Dispensary Staff 215
GENERAL STATEMENT 217
DEPARTMENTS OF INSTRUCTION . . 217
PREPARATION 233
REQUIREMENTS FOR ADMISSION . . 234
ADVANCED STANDING 236

PAGE

PROMOTION 236
REQUIREMENTS FOR GRADUATION . 237
Honors 237
Outline of Course 237
Examinations 239
Text-books 239
Fees and Expenses 241
General Information 242
Summer Courses 243
Standing and Certificates 243

DENTAL SCHOOL

FACULTY OF THE DENTAL SCHOOL . 247
Other Instructors 248
Laboratory Assistants 250
Standing Committees 250
GENERAL STATEMENT 251
COURSE OF INSTRUCTION 255
REQUIREMENTS FOR ADMISSION AND GRADUATION 262
Examinations 264
Outline of Course 265
Text-books 265
Expenses 266
GENERAL INFORMATION 267
SUMMER COURSES 268

BROMFIELD-PEARSON SCHOOL

BOARD OF INSTRUCTION 270
GENERAL STATEMENT 271
Admission 271
Expenses 272

THE HARPSWELL LABORATORY 273

DEGREES AND HONORS

FORTY-EIGHTH ANNUAL COMMENCEMENT (Degrees Conferred) . . . 277
Commencement Parts 282
AWARDS OF PRIZES 283

REGISTER OF STUDENTS

GRADUATE DEPARTMENT 286
COURSES IN ARTS AND SCIENCES . 287
Special Students 295
DIVINITY SCHOOL 297
BROMFIELD-PEARSON SCHOOL 298
MEDICAL SCHOOL 299
DENTAL SCHOOL 309
SUMMER SCHOOL 314
SUMMARY 315
REGISTER OF THE HARPSWELL LABORATORY 316

Calendar

1904

SEPT.	22.	College year begins (all departments except the Medical and Dental Schools), Thursday morning
SEPT.	24.	Regular College exercises begin
OCT.	1.	Entrance examinations at the Medical and Dental Schools, Saturday
OCT.	2.	Russell Lecture, Sunday, 4.30 P.M.
OCT.	4.	Lectures begin in the Medical and Dental Schools, Tuesday
NOV.	16.	Announcement of Academic Honors, 12 M., Wednesday
NOV.	23.	Thanksgiving recess begins, Wednesday, at 1 P.M.
NOV.	27.	Thanksgiving recess ends, Sunday evening
DEC.	22.	Christmas recess begins, Thursday evening

1905

JAN.	5.	Christmas recess ends, Thursday evening
JAN.	31.	Mid-year examinations begin in the College of Letters, Tuesday
FEB.	4.	Mid-year examinations begin in the Department of Engineering, Saturday
FEB.	11.	End of first half-year, Saturday. Plans of study for the second half-year must be reported before noon of this day
FEB.	13.	Second half-year begins, Monday
FEB.	22.	Washington's Birthday, Wednesday. College exercises suspended
APRIL	5.	Spring recess begins, Wednesday evening
APRIL	12.	Spring recess ends, Wednesday evening
APRIL	19.	Patriots' Day, Wednesday. College exercises suspended
MAY	12.	Goddard Prize Reading in the College of Letters, Friday, 3 P.M.
MAY	23.	Greenwood Prize Reading in the Divinity School, Tuesday, 3 P.M.
MAY	25.	Final examinations for Senior Engineers begin, Thursday
MAY	30.	Memorial Day, Tuesday. College exercises suspended
JUNE	5.	Final examinations begin in the College of Letters, Monday
JUNE	9.	Final examinations begin for the Department of Engineering (except Seniors), Friday
JUNE	11.	Baccalaureate Sermon, Sunday, 4.30 P.M.
JUNE	12.	Entrance Examinations at the Medical and Dental Schools, Monday
JUNE	16.	Class Day, Friday
JUNE	18.	Semi-Centennial Sunday
JUNE	20.	Forty-ninth Annual Commencement, Tuesday
JUNE	21.	Commemoration Day, Wednesday

First Examination for Admission to the College of Letters, the Engineering Department, and the Divinity School

JUNE 22. Algebra, 9 to 10.30 A.M.; English, 10.30 A.M. to 12.30 P.M.; Plane Geometry, 2 to 4 P.M.; Physics, 4 to 5 P.M.; Drawing, 4 to 6 P.M.

JUNE 23. Elementary and Advanced Latin, 9 to 12 A.M.; Advanced Mathematics, 9 to 11 A.M.; Natural History (two subjects), 11 A.M. to 1 P.M.; History, 2 to 4 P.M.; Chemistry, 4 to 5 P.M.

JUNE 24. Advanced German and French, 9 to 11 A.M.; Elementary German and French, 11 A.M. to 12.30 P.M.; Elementary and Advanced Greek, 2 to 5 P.M.

JUNE 15 to SEPT. 15. Session of the Harpswell Laboratory

Summer Vacation, Thirteen Weeks

Second Examination for Admission to the College of Letters, the Engineering Department, and the Divinity School

SEPT. 18. Advanced German and French, 9 to 11 A.M.; Elementary German and French, 11 A.M. to 12.30 P.M.; Elementary and Advanced Greek, 2 to 5 P.M.

SEPT. 19. Algebra, 9 to 10.30 A.M.; English, 10.30 A.M. to 12.30 P.M.; Plane Geometry, 2 to 4 P.M.; Physics, 4 to 5 P.M.; Drawing, 4 to 6 P.M.

SEPT. 20. Elementary and Advanced Latin, 9 to 12 A.M.; Advanced Mathematics, 9 to 11 A.M.; Natural History (two subjects), 11 A.M. to 1 P.M.; History, 2 to 4 P.M.; Chemistry, 4 to 5 P.M.

SEPT. 21. College year begins, Thursday morning
Registration of all students at the Secretary's office
Major departments and plans of study for the first half-year must be reported before 4 P.M. of this day

SEPT. 23. Regular College exercises begin, Saturday

SEPT. 25. Entrance examinations at the Medical and Dental Schools, Monday

SEPT. 27. Lectures begin in Medical and Dental Schools, Wednesday

OCT. 1. Russell Lecture, Sunday

NOV. 22. Announcement of Academic Honors, 12 M., Wednesday

NOV. 29. Thanksgiving recess begins, Wednesday, at 1 P.M.

DEC. 3. Thanksgiving recess ends, Sunday evening

DEC. 21. Christmas recess begins, Thursday evening

1906

JAN. 4. Christmas recess ends, Thursday evening

JAN. 30. Mid-year examinations begin in the College of Letters, Tuesday

FEB. 3. Mid-year examinations begin in the Department of Engineering, Saturday

FEB. 10. End of the first half-year, Saturday

FEB. 12. Second half-year begins, Monday

Historical Sketch

Tufts College was established under a charter granted on the twenty-first day of April, 1852, by the General Court of Massachusetts. Under this charter, as later amended, the College is empowered "to confer such degrees as are usually conferred by colleges in New England." Its organization now comprises the College of Letters, the Divinity School, the Medical School, and the Dental School. The College of Letters gives the degrees of Bachelor of Arts, Bachelor of Philosophy, and, for special courses in science and engineering, Bachelor of Science; also the graduate degrees of Master of Arts, Master of Science, Doctor of Philosophy, Civil, Electrical, and Mechanical Engineer. The course in the Divinity School leads to the degree of Bachelor of Divinity; that in the Medical School to the degree of Doctor of Medicine; and that in the Dental School to the degree of Doctor of Dental Medicine.

The Foundation.—The movement resulting in the founding of the College was set on foot in 1847, through the efforts of the Rev. Thomas J. Sawyer, of New York, the Rev. Hosea Ballou, 2d, of Medford, and the Rev. Thomas Whittemore, of Cambridgeport. After much consideration, the work of raising a fund of one hundred thousand dollars for a foundation was undertaken, under the direction of the Rev. Otis A. Skinner, of Boston. About sixty thousand dollars was obtained in money. Sylvanus Packard gave his bond for twenty thousand dollars additional, and Charles Tufts gave twenty acres of land on Walnut Hill, embracing the present site of the College. Mr. Tufts announced his intention of increasing his gift of land to more than one hundred acres, and thus became the largest benefactor of the young institution, which accordingly received his name. Mr. Packard was a Boston merchant, who from the

beginning made the College a peculiar care, and bequeathed to it his entire fortune. Among other benefactors who may be numbered among the founders of the College were Oliver Dean, who gave it ninety thousand dollars, and Thomas A. Goddard, whose gifts, though unobtrusive, were constant. Mrs. Goddard continued the generosity of her husband, and at her death made a substantial bequest to the College. Dr. William J. Walker also made gifts and bequests amounting to nearly three hundred thousand dollars.

While the College owed its beginning to the effort and the support of members of the Universalist denomination, it was provided by the Legislature in the charter that

"No instructor in said college shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said college, on account of the religious opinions he may entertain."

This provision has always been interpreted by the Trustees and Faculty in its broadest sense. The non-sectarian character of the work of the College is amply shown by the membership of its Faculty and student body. The truth, and not the maintenance of any religious or political doctrine, has been the aim of its research and its instruction.

The College of Letters.—The first Faculty meeting was held October 9, 1854, when there were in College students forming the Sophomore and the Freshman class. The only building at that time was the main College Building, now known as Ballou Hall. The next building to be erected was a small brick dormitory, now the Library building. The large dormitory known as East Hall was the next addition to the group, and in 1872 West Hall was opened to students. It was ten years before building operations were renewed by the College. The original Faculty numbered five. The first class, of three members, was graduated in 1857.

At the outset, provision was made for a course of study leading to the degree of Bachelor of Arts. The only feature of its

work peculiar to Tufts College in these years of its beginning was the attention given to the study of history. The first president of the College, the Rev. Hosea Ballou, 2d, D.D., was likewise Professor of History and of Intellectual Philosophy, and gave instruction in history remarkable alike for its quantity and quality, at a time when the study was hardly recognized in American colleges.

Dr. Ballou was succeeded in the presidency by the Rev. Alonzo Ames Miner, D.D., LL.D., who was inaugurated in 1862, and continued in office until 1875, resigning in February of that year. Dr. Miner's incumbency was marked by large financial additions to the College, and by the further growth of a broad and scholarly spirit.

In March, 1875, the Rev. Elmer Hewitt Capen, D.D., was elected to the presidency of the College, vacated by the resignation of President Miner, and he was inaugurated on the second day of June.

The Engineering courses were begun in 1869 with a department of Civil Engineering. The great development of electrical science was promptly recognized, and a department of Electrical Engineering was opened to students in 1882, a professorship in the subject being established in 1890. This side of the College work had rapid development: in 1894 the field was broadened by the addition of a course in Mechanical Engineering, and 1898 by one in Chemical Engineering. In these courses effort has always been made to give thorough practical training. The will of the late Henry B. Pearson, founding the Bromfield-Pearson School, and putting it into the hands of the Trustees of Tufts College to administer, provided a thoroughly-equipped building for technical instruction, of great value in drawing, pattern-making, machine and forge work. The Bromfield-Pearson building was completed in the fall of 1894. Robinson Hall, completed in 1900, gives to the technical courses a modern building with every facility for their work. It is given in memory of the late Charles Robinson, LL. D., sometime President of the Trustees, by his heirs.

In 1881 the late Phineas T. Barnum gave fifty-five thousand dollars for the establishment of the Barnum Museum of Natural History, and by his last will he bequeathed forty thousand dollars more. The main Museum building was completed in 1884. The west wing, containing the new biological laboratories, was erected in 1894. The years 1882 and 1883 saw the completion of Goddard Chapel, given by Mrs. Mary T. Goddard as a memorial of her husband, the first treasurer of the College. Goddard Gymnasium, a gift from the same source, was also completed in 1883. The gymnasium has been enlarged and transformed into what is practically a new building. Dean Hall was erected in 1887 from funds bequeathed by the late Oliver Dean. In the College year 1894-95 two new buildings were opened, in addition to the west wing of the Barnum Museum. These were the Chemical building and Curtis Hall, containing students' rooms, a dining-hall, and the post-office.

The development of the College in its internal life has been the notable fact of recent years. In 1866 the degree of Bachelor of Philosophy was offered to students who should pursue a prescribed course of two years, the object being to provide for those who had been prepared only in English subjects. This course was maintained until 1875, when it was changed to a course of four years. The requirements for admission were then made the same as for the regular course, except that Greek as a condition of entrance was omitted, and an amount of work in French or German, considerably less than its equivalent, was substituted. In 1891 a new course of study, leading to the degree of Bachelor of Arts, was offered, with an entrance requirement believed to be fully the equivalent of the Greek, in two modern languages. This was one important step taken by the College toward the broadening of its opportunities, but it soon proved to be insufficient. There had been a steady growth for many years in the amount of work done, and in the number of departments of learning represented. Two new departments had been instituted in 1892, in response to the tendencies of

educational development,—those of Biology and History. Departments of Music and Philosophy have since been added, the work in Political Science has been broadened and provision made for the study of Public Law. In the fall of 1893 it seemed possible to take another step and to put into operation the present plan of work, which is believed to be an approach to a rational co-ordination and connection of the college and university systems. The principle which governed this adjustment of the College curriculum has been applied to the new entrance requirements.

There were opened in 1895 courses of four years each in Biology, Chemistry, General Science, and Medical Preparatory work, leading to the degree of Bachelor of Science, and accessible to graduates of all good high schools. Bachelors of Science and Philosophy may, if they desire, go on to the attainment of the degree of Bachelor of Arts.

In response to a pressing demand the college was, in the Summer of 1892, opened to women on the same terms as to men. In the fall of 1894 there was opened, for the accommodation of women students, Metcalf Hall, the gift of Albert Metcalf, of Newton. The Start House now offers home-like rooms for women students.

The Professional Schools.—The will of Mr. Packard required that a professor of Christian Theology should be maintained from the income of funds bequeathed by him. The Rev. Thomas J. Sawyer, D.D., was elected Packard Professor in 1869. This was the beginning of the Divinity School. In 1882 the school had developed so that its Faculty received a definite organization, and Dr. Sawyer became the first Dean, retaining the office until his retirement as Packard Professor Emeritus in 1892. He was succeeded by the present Dean, Rev. Charles H. Leonard, D.D. From the erection of West Hall until the completion of the separate buildings of the school, the western side of West Hall was occupied by the Divinity School. In 1892, by the gift of ex-President Miner,

the school was provided with Miner Hall, containing the library, class rooms, chapel and reception room; and at the same time, largely through the efforts of the Dean, the money was obtained to build Paige Hall, a dormitory for students of the Divinity School.

In 1903 a five-year course was offered to students of divinity, combining subjects required for a proper professional equipment with studies that look toward liberal culture. At the successful completion of this course the degrees A.B. and B.D. are both awarded.

In 1893 Tufts College met what seemed to be a need of the community by opening the Tufts Medical School. The growth of the school in efficiency and numbers justified its institution. The course is four years in length, and, as in other departments of the College, women stand upon the same terms as men.

The Medical School found its complement in the Tufts Dental School, organized in 1899 by the absorption of the Boston Dental College, which was incorporated in 1868, and has a numerous body of alumni. The equipment, funds, and good will of this school passed to Tufts College.

Administration.—The control of the College is vested by the charter in a self-perpetuating body of Trustees, not to exceed thirty in number. As the College has matured the number of its alumni upon the Board of Trustees has steadily increased. To give the Alumni as a whole a direct representation in the administration, a Board of Overseers has been instituted. The several Faculties are appointed by the Trustees, with the approval of the Overseers.

THE COLLEGE CHARTER

SECTION 1. B. B. Mussey, Timothy Cotting, Richard Frothingham, Jr., their associates and successors, are hereby constituted a body corporate by the name of the Trustees of Tufts College, in Medford, and they and their successors, and such as shall be duly elected members of said corporation, shall be and remain a body corporate by that name forever. And for the orderly conducting of the business of said corporation, the said Trustees shall have power and authority, from time to time, as occasion may require, to elect a President, Vice-President, Secretary and Treasurer, and such other officers of said corporation as may be found necessary, and to declare the duties and tenures of their respective offices; and also to remove any Trustee from the same corporation, when in their judgment he shall be rendered incapable, by age or otherwise, of discharging the duties of his office, or shall neglect or refuse to perform the same; and also, from time to time, to elect new members of the said corporation; provided, nevertheless, that the number of members shall never be greater than thirty.

SEC. 2. The said corporation shall have full power and authority to determine at what times and places their meetings shall be holden, and the manner of notifying the Trustees to convene at such meetings, and also, from time to time, to elect a President of said College, and such professors, tutors, instructors, and other officers of the said College as they shall judge most for the interest thereof, and to determine the duties, salaries, emoluments, responsibilities, and tenures of their several offices. And the said corporation are further empowered to purchase or erect, and keep in repair, such houses and other buildings as they shall judge necessary for the said College; and also to make and ordain, as occasion may require, reasonable rules, orders, and by-laws, not repugnant to the Constitution and Laws of this Commonwealth, with reasonable penalties, for the good government of the said College, and for the regulation of their own body; and also to determine and regulate the course of instruction in said College, and to confer such degrees as are usually conferred by colleges in New England; provided, nevertheless, that no corporate business shall be transacted at any meeting unless one-third, at least, of the Trustees are present.

SEC. 3. The said corporation may have a common seal, which they may alter or renew at their pleasure, and all deeds sealed with the seal of said corporation, and signed by their order, shall, when made in their corporate name, be considered in law as the deeds of said corporation; and said corporation may sue and be sued in all actions, real, personal, or mixed; and may prosecute the same to final judgment and execution by the name of the Trustees of Tufts College; and said corporation shall be capable of taking and holding in fee simple, or any less estate, by gift, grant, bequest, devise, or otherwise, any lands, tenements, or other estate,

real or personal, provided, that the clear annual income of the same shall not exceed two hundred thousand dollars.*

SEC. 4. The clear rents and profits of all the estate, real and personal, of which the said corporation shall be seized and possessed, shall be appropriated to the endowment of said College in such manner as shall most effectually promote virtue and piety, and learning in such of the languages, and of the liberal and useful arts and sciences, as shall be recommended from time to time by the said corporation, they conforming to the will of any donor or donors in the application of any estate which may be given, devised, or bequeathed, for any particular object connected with the College.

SEC. 5. No instructor in said College shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said College on account of the religious opinions he may entertain.

SEC. 6. The Legislature of this Commonwealth may grant any further powers to, or alter, limit, annul, or restrain any of the powers vested by this act in the said corporation, as shall be found necessary to promote the best interests of the said College, and more especially may appoint and establish overseers or visitors of the said College, with all necessary powers for the better aid, preservation, and government thereof.

SEC. 7. The granting of this Charter shall never be considered as any pledge on the part of the Government that pecuniary aid shall hereafter be granted to the College.

THE CONSTITUTION OF THE BOARD OF OVERSEERS

SECTION 1. There shall be, and hereby is established, a Board of Overseers of Tufts College.

This Board shall consist of the President of the College, *ex officio*, and sixteen other persons, who shall have received a degree from the College, in course, not less than ten years previous to their election, provided that not less than twelve members of said Board at any time shall be persons who have taken the degree of A. B., S. B., or Ph. B., in course from Tufts College.

No officer of instruction in Tufts College shall be eligible to election to the Board of Overseers, and if an Overseer be appointed to such office of instruction, his position as Overseer shall be thereby vacated.

No Trustee of Tufts College shall be eligible to election to the Board of Overseers, and any member of the Board of Overseers becoming a Trustee of Tufts College shall thereby cease to be an Overseer.

* The limitation as to income has been removed recently by statute.

No person shall be eligible for election to the Board of Overseers for more than two successive full terms.

Persons elected to the Board of Overseers must qualify by accepting such election in writing within three months from receipt of notice thereof.

SEC. 2. All persons who have received from the College a degree in regular course, or an honorary degree, shall be entitled to vote for Overseers, provided that no person who has received any degree in regular course shall be entitled by virtue thereof to vote for Overseers before the fifth annual election following receipt of such degree.

SEC. 3. For the purpose of the first election of Overseers a Committee of ten shall be appointed, five chosen by the Trustees of the College, and five chosen by the Association of the Alumni of Tufts College, or its Executive Committee. This committee shall nominate not less than thirty-two candidates, and ballots prepared on the so-called Australian system shall be sent by mail not later than August 1, 1899, to the last known address of every person entitled to vote under the conditions hereinbefore set forth. Such persons may send their ballots, duly signed, to some person designated by said Nominating Committte, so that they may be received at least not later than September 9, 1899, and the sixteen candidates having the largest number of votes shall be declared elected, provided that the provisions of Section 1, regarding eligibility, must not be infringed upon.

The said Nominating Committee shall receive and count the ballots, and ascertain the result of the election. They shall thereupon make report of their proceedings to the Trustees, and shall cause the names of the persons elected to be posted at the College, the first day of the Fall Term. The Secretary of the Trustees shall notify the members-elect of their election and of the first meeting, to be called at such time and place as the President of the College shall designate.

At the first meeting after the first election the elected members of the Board shall be divided by lot into four classes, to hold office one, two, three, and four years, respectively. The term of office of Overseers subsequently elected shall be four years, provided that elections to fill vacancies shall be for the unexpired portion of the term.

After the first election, such vacancies as occur, either by expiration of term or otherwise, shall be filled by an annual election, to be held under such regulations as the Overseers may make, subject, however, to the provisions as to eligibility and right of suffrage herein contained, and provided that voting shall be by mail and according to the so-called Australian system of balloting.

SEC. 4. The Trustees of Tufts College shall submit to the Overseers for approval all nominations for officers of instruction in all departments of the College, whether permanent or temporary, of or above the grade

of instructor, together with all votes providing for changes in or additions to departments of instruction. Upon notice of such action as hereinbefore specified, the Overseers may approve or disapprove the same, and notice of the action of the Overseers shall be communicated to the Trustees forthwith, provided that failure to act promptly upon any matter submitted to the Overseers shall be taken as approval.

The Overseers shall have power to recommend to the Trustees such action in any matter of college management or government, not purely financial, as may seem to them advisable, including the power to nominate officers of instruction and government.

SEC. 5. The Overseers shall elect a President and a Secretary. It shall be the duty of the Secretary to notify the Trustees of all action taken upon all matters submitted to the Overseers by the Trustees.

The Overseers shall hold stated meetings at such time as they may by general rules determine. The Executive Committee of the Trustees may order special meetings at any time.

The Overseers may adopt regulations and by-laws for the transaction of their business, not inconsistent herewith, and may declare a vacancy in their Board whenever in their judgment sufficient cause exists. No pecuniary liability shall be incurred by the Overseers, except by the authority of the Executive Committee of the Trustees.

THE ADMINISTRATION OF THE COLLEGE

The Trustees

President

HOSEA WASHINGTON PARKER

Vice-President

THOMAS HENRY ARMSTRONG

Secretary

HENRY WARREN RUGG, Providence, R. I.
Boston office, 40 Water St.

Treasurer

ARTHUR ELLERY MASON, 40 Water St., Boston

Executive Committee

FREDERICK WILLIAM HAMILTON, *Chairman*

ELMER HEWITT CAPEN	THOMAS HENRY ARMSTRONG
HENRY WARREN RUGG	HENRY DUDLEY WILLIAMS
BYRON GROCE	SUMNER ROBINSON
ALBERT METCALF	THOMAS CUNNINGHAM

Committee on Finance

WALTER EDWARD PARKER, *Chairman*

WILLIAM WALDEMAR SPAULDING	J. FRANK WELLINGTON
ARTHUR ELLERY MASON	JAMES ARTHUR JACOBS

Trustees

TIMOTHY THOMPSON SAWYER, LITT.D. . . . . Boston
ELMER HEWITT CAPEN, A.M., D.D., LL.D. . . . . Somerville
CHARLES SCOTT FOBES, A.M. . . . . Portland, Me.
THOMAS HENRY ARMSTRONG, A.M. . . . . Waltham
HENRY WARREN RUGG, D.D. . . . . Providence, R. I.
JOHN COLEMAN ADAMS, A.M., D.D. . . . . Hartford, Conn.
BYRON GROCE, A.M., LITT.D. . . . . Boston
ARTHUR ELMER DENISON, A.B. . . . . Cambridge
HENRY DUDLEY WILLIAMS, A.M. . . . . Boston
WILLIAM OSCAR CORNELL, A.M. . . . . Providence, R. I.
HOSEA WASHINGTON PARKER, A.M. . . . Claremont, N. H.
WALTER EDWARD PARKER, A.M. . . . . Lawrence
WILLIAM WALDEMAR SPAULDING, A.B. . . . . Haverhill
DAVID CUMMINGS, A.M. . . . . Somerville

FRED STARK PEARSON, A.M.M., S.D. . . . . New York, N.Y.
CHARLES EWELL MORRISON, A.M. . . . . Boston
SUMNER ROBINSON, A.M., LL.B. . . . . Newton
ALBERT METCALF, A.M. . . . . Newton
JOHN WILKES HAMMOND, A.B., LL.D. . . . . Cambridge
FREDERICK WILLIAM HAMILTON, A.M., D.D. . . . . Boston
J. FRANK WELLINGTON, A.M. . . . . Somerville
WILLIAM ERASTUS GIBBS, A.B., D.D. . . . . Lawrence
ARTHUR ELLERY MASON, A.M. . . . . Boston
ROBERT ROBBINS ANDREWS, A.M., D.D.S. . . . . Cambridge
THOMAS CUNNINGHAM . . . . . Boston
JAMES ARTHUR JACOBS . . . . . Boston

The Overseers

President

WALTER PARKER BECKWITH, A.M., PH.D.

Secretary

ARTHUR WINSLOW PEIRCE, LITT.D.

Term expires in 1905

WALTER PARKER BECKWITH, A.M., PH.D.
HENRY BLANCHARD, A.M., D.D.
WILLIAM DAVIS THAYER TREFRY, A.B.
MINTON WARREN, PH.D., LL.D.

Term expires in 1906

EDWARD HENRY CLEMENT, A.M., LITT.D.
ARTHUR WINSLOW PEIRCE, LITT.D.
SAMUEL WARREN MENDUM, A.M.
MILTON GERRY STARRETT, A.M.B.

Term expires in 1907

ALPHONSO HOLLAND CARVILL, A.M., M.D.
EDWIN GINN, A.M., LITT.D.
FRANK MORTIMER HAWES, A.M.
FRANK THOMAS DANIELS, A.M.B.

Term expires in 1908

FRANCIS BISHOP HARRINGTON, A.B., M.D.
FRED GOWING, PH.D.
HIRAM AUGUSUS TUTTLE, A.M.
ARTHUR WINFIELD DEGOOSH, A.B., LL.B.

BOARDS OF VISITORS

[Appointed by the Overseers]

To the College of Letters

MILTON GERRY STARRETT, A.M.B.
FRED GOWING, PH.D.
EDWARD HENRY CLEMENT, A.M.
ARTHUR EVERETT PETERSON, A.M.
HIRAM AUSTIN TUTTLE, A.M.

To the Divinity School

ARTHUR WINSLOW PEIRCE, LITT.D.
FRANK MORTIMER HAWES, A.M.
FRANK THOMAS DANIELS, A.M.B.
DWIGHT M. HODGE, D.D.
FREDERICK WILLIAMS PERKINS, B.D., A.M.

To the Medical School

ALPHONSO HOLLAND CARVILL, A.M., M.D.
ARTHUR WINFIELD DEGOOSH, A.B., LL.B.
QUINCY ADAMS SHAW, JR., A.B.
CHARLES SEDGWICK RACKEMANN, A.M.
WILLIAM LINCOLN PARKER

To the Dental School

WILLIAM DAVIS THAYER TREFRY, A.B.
SAMEUL W. MENDUM, A.M.
QUINCY ADAMS SHAW, JR., A.B.
CHARLES SEDGWICK RACKEMANN, A.M.
WILLIAM LINCOLN PARKER

Directors of the Women

[Appointed by the Trustees]

MRS. MARY LEAVITT CAPEN
MRS. SUSAN PEARSON ANTHONY
MRS. MARY INGRAHAM WREN
MRS. LILLIAN AYER MAULSBY

Officers of Instruction and Government*

ELMER HEWITT CAPEN, A.M., D.D., LL.D. . . 8 Professors Row
PRESIDENT, *and Professor of Moral Philosophy and Political Economy*

CHARLES HALL LEONARD, A.M., D.D. . . . . 120 Packard Ave.
Goddard Professor of Homiletics and Pastoral Theology, and Dean of the Divinity School

JEROME SCHNEIDER, PH.D. . . . . 28 Professors Row
Professor of Greek

EDWIN CORTLANDT BOLLES, PH.D., D.D. . . . 184 College Ave.
Dickson Professor of English and American History

WILLIAM ROLLIN SHIPMAN, A.M., D.D., LL.D. . 101 Talbot Ave.
Goldthwaite Professor of Rhetoric, Professor of Logic, and Dean of the Faculty of the College of Letters

HENRY WATSON DUDLEY, M.D. . . . . Abington
Professor of Pathology, Emeritus, and Lecturer on Legal Medicine

CHARLES PAINE THAYER, A.M., M.D. Tufts College Medical School
Professor of General, Descriptive, and Applied Anatomy, and Secretary of the Medical and Dental Schools

CHARLES DURLIN BRAY, C.E., A.M. . . . . 98 Professors Row
Professor of Mechanical Engineering

JOHN LEWIS HILDRETH, A.M., M.D., LL.D.
Professor of Clinical Medicine, Emeritus 14 Garden St., Cambridge

AMOS EMERSON DOLBEAR, M.E., PH.D., LL.D. 134 Professors Row
Professor of Physics

ERNEST WATSON CUSHING, A.B., M.D., LL.D.
168 Newbury St., Boston
Professor of Abdominal Surgery and Gynaecology

GEORGE MILFORD HARMON, A.M., D.D. . . . . 114 Curtis St.
Professor of Biblical Theology

* The members of the Faculty, with the exception of the President, are arranged in the order of the time at which their first academic degrees were taken, or the time of their studies, where an academic degree was not taken in course. A separate list of Lecturers and Assistants is provided.

HENRY JABES BARNES, M.D. . . . . 429 Beacon St., Boston
Professor of Hygiene

CHARLES ERNEST FAY, A.M., LITT.D. . . . . 92 Professors Row
Wade Professor of Modern Languages

WILLIAM GEORGE TOUSEY, A.M., D.D. . . . 106 Professors Row
Ryder Professor of Ethics and the Philosophy of Theism

EDWARD OSGOOD OTIS, A.B., M.D. . . . . 381 Beacon St., Boston
Professor of Pulmonary Diseases and Climatology

GEORGE THOMSON KNIGHT, A.M., D.D.* . . 114 Professors Row
Packard Professor of Christian Theology

CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree
Professor of General Chemistry

EDGAR OSGOOD KINSMAN, D.D.S. . . 15 Brattle Sq., Cambridge
Instructor in Clinical Dentistry

WARREN SAMUEL WOODBRIDGE, A.M., B.D. 32 Pearl St., Medford
Woodbridge Professor of Applied Christianity

Pearson Professor of Geology and Mineralogy

JOHN STERLING KINGSLEY, SC.D. . . . . 128 Professors Row
Professor of Biology, and Dean of the Graduate Department

ARTHUR MICHAEL, A.M., PH.D. . . . . 27 Brimmer St., Boston
Professor of Chemistry

MORTON PRINCE, A.B., M.D. . . . . 458 Beacon St., Boston
Professor of Diseases of the Nervous System

HAROLD WILLIAMS, A.B., M.D. . . . . 528 Beacon St., Boston
Professor of the Theory and Practice of Medicine, and Dean of the Medical and Dental Schools

HENRY BECKLES CHANDLER, C.M., M.D.
Professor of Ophthalmology 341-2 Beacon St., Boston

SAMUEL AUGUSTUS HOPKINS, M.D., D.D.S.
235 Marlborough St., Boston
Professor of the Theory and Practice of Dentistry

HENRY HILDRETH PIPER, A.B., D.D.S. 71 Sycamore St., Somerville
Instructor in Clinical Dentistry

---

* Absent on leave.

HERBERT WARREN WHITE, M.D. . 151 Humboldt Ave., Roxbury
Assistant Professor of the Theory and Practice of Medicine

GARDNER WELD ALLEN, A.B., M.D. . . 419 Boylston St., Boston
Assistant Professor of Genito-Urinary Surgery

WILLIAM LESLIE HOOPER, A.M., PH.D. . . . 124 Professors Row
Professor of Electrical Engineering

JAMES SULLIVAN HOWE, M.D. . . . . 15 Charles St., Boston
Professor of Dermatology

EDWARD MAVERICK PLUMMER, M.D. . . 4 Arlington St., Boston
Professor of Otology

GARDNER CHACE ANTHONY, A.M. . . . . 14 Professors Row
Professor of Technical Drawing, and Dean of the Department of Engineering

FREDERIC MELANCTHON BRIGGS, A.B., M.D.,
Professor of Clinical Surgery 31 Massachusetts Ave., Boston

HOWARD SUMNER DEARING, A.M., M.D. 607 Tremont St., Boston
Assistant Professor of Clinical Medicine

BYRON HOWARD STROUT, D.D.S. . . . . Taunton
Assistant Professor of Operative Technics, and Instructor in Anaesthesia

FRANK GEORGE WHEATLEY, A.M., M.D. . . . . North Abington
Professor of Materia Medica and Therapeutics

EDWARD WALTER BRANIGAN, D.D.S.
Professor of Clinical Dentistry 2 Commonwealth Ave., Boston

JOSEPH KING KNIGHT, D.D.S. . . . . Hyde Park
Professor of Prosthodontia

EDWARD BINNEY LANE, A.B., M.D. . Austin St., New Dorchester
Professor of Mental Diseases

EDWARD LAMBERT TWOMBLY, A.B., M.D.
Instructor in Clinical Gynaecology 483 Beacon St., Boston

GEORGE LYLE MARSHALL, D.D.S. . . . . 5 Bow St., Somerville
Instructor in Prosthetic Dentistry

GEORGE HAMLIN WASHBURN, A.B., M.D.
Professor of Obstetrics 377 Marlborough St., Boston

ARTHUR EVERETT AUSTIN, A.M., M.D. 163 Suffolk Road,
Professor of Medical Chemistry and Toxicology Chestnut Hill

CHARLES MELVILLE WHITNEY, M.D., . 591 Tremont St., Boston
Instructor in Genito-Urinary Diseases

HENRY MARTIN HILLS, D.D.S. . . 2 Commonwealth Ave., Boston
Instructor in Clinical Dentistry

HORACE DAVID ARNOLD, A.B., M.D. . . . 427 Beacon St., Boston
Professor of Clinical Medicine

GEORGE ANDREW BATES, D.D.S., M.S. . . . . Auburndale
Professor of Histology

FREDERICK MORTIMER HEMENWAY, D.D.S.
Professor of Prosthetic Dentistry 88 Boylston St., Boston

FRED CARVILL MERRILL, D.D.S. . . . . Wollaston
Instructor in Prosthetic Dentistry

WILLIAM RICE, D.D.S. . . . . 845 Boylston St., Boston
Instructor in Clinical Dentistry

KARL AUGUST HOCH, M.D. . . . . MacLean Asylum, Waverley
Instructor in Neuro-Pathology

WILLIAM PRESTON HOUSTON, D.D.S. . 419 Boylston St., Boston
Instructor in Clinical Dentistry

GEORGE WARTON KAAN, M.D. . . . . 419 Boylston St., Boston
Professor of Clinical Gynaecology

JOHN JENKS THOMAS, A.M., M.D. . . . 88 Bay State Road, Boston
Instructor in Neurology

JOHN LINCOLN AMES, A.B., M.D. . . . . 72 Chestnut St., Boston
Assistant Professor of Clinical Medicine

WILLIAM ELISHA CHENERY, A.B., M.D.
Assistant Professor of Laryngology 222 Huntington Ave., Boston

HERBERT ERNEST CUSHMAN, B.D., A.M., PH.D.
Professor of Philosophy Hotel Woodbridge, W. Somerville

LEO RICH LEWIS, A.M. . . . . 20 Professors Row
Professor of the History and Theory of Music

DAVID LEE MAULSBY, A.M. . . . . 80 Curtis St.
Professor of English Literature and Oratory

FRANK BERRY SANBORN, C.E., M.S.
Professor of Civil Engineering 10 Buena Vista Park, Cambridge

FRANK WILLIAMS DURKEE, A.M. . . . . 38 Professors Row
Professor of Inorganic Chemistry

ROBERT WORTHINGTON HASTINGS, A.M., M.D.
Instructor in the Theory and Practice of Medicine, and Assistant in Pediatrics 45 Kilsyth Road, Brookline

KNUT JOSEPH LUTTROPP, D.D.S., . . . 419 Boylston St., Boston
Demonstrator in Operative Dentistry and Instructor in Porcelain Work

EDWARD ALLEN PEASE, M.D. . . . . 483 Beacon St., Boston
Instructor in Clinical Gynaecology

EDMUND CHANNING STOWELL, A.B., M.D.
69 Adams St., Dorchester
Assistant Professor of Children's Diseases

RICHARD FITCH CHASE, M.D. . . . 246 Huntington Ave., Boston
Instructor in Clinical Medicine, and Lecturer on Gastro-Intestinal Diseases

JOHN NELSON COOLIDGE, A.B., M.D. 409 Marlborough St., Boston
Instructor in Clinical Medicine

THEODORE CHARLES ERB, M.D. . . . 159 St. Botolph St., Boston
Instructor in Obstetrics

ARTHUR WILLARD FAIRBANKS, M.D.
Instructor in Clinical Medicine 362 Commonwealth Ave., Boston

JOHN WOOD FORBES, D.D.S. . . . . 419 Boylston St., Boston
Instructor in Clinical Dentistry

CHARLES DAVISON KNOWLTON, M.D. . 574 Warren St., Roxbury
Instructor in Pathology and Bacteriology

HORACE SHERIDAN MORAN, A.B., M.D. . 86 Warren St., Roxbury
Instructor in Obstetrics

EUGENE THAYER, A.M., M.D. . . . 2683 Washington St., Roxbury
Demonstrator of Anatomy

GEORGE VAN NESS DEARBORN, M.D., A.M., PH.D.
Garrison Hall, Garrison St., Boston
Assistant Professor of Physiology

FRANCIS DENNIS DONOGHUE, M.D. 409 Marlborough St., Boston
Instructor in Clinical Surgery

FREDERICK WARREN PEARL, A.B., M.D.
Instructor in Operative and Clinical Surgery, and Assistant Demonstrator of Anatomy, Hotel Vendome, Commonwealth Ave., Boston

EDWARD HENRY ROCKWELL, S.B. 133 Powder House Boulevard,
Assistant Professor of Civil Engineering Somerville

EDWARD ELIPHALET THORPE, M.D. 711 Boylston Street, Boston
Instructor in Medical Chemistry

CHARLES BALFOUR DARLING, A.B., M.D.
Instructor in Clinical Gynaecology 27 Rockville Park, Roxbury

WILLIAM KENDALL DENISON, A.M. . . . . 126 Packard Ave.
Professor of the Latin Language and Literature

TIMOTHY LEARY, M.D. . . . . 20 Sunset St., Roxbury
Professor of Pathology and Bacteriology

CHARLES FAIRBANK PAINTER, A.B., M.D.
Assistant Professor of Orthopedic Surgery 86 Bay State Road, Boston

FRANK PERCIVAL WILLIAMS, M.D. . . 419 Boylston St., Boston
Instructor in Rectal Diseases

CHARLES HARRIS CHASE, S.B. . . . . Stoneham
Assistant Professor of Steam Engineering

WILLIAM MARTIN FLYNN, D.D.S. . . 474A Broadway, S. Boston
Instructor in Clinical Dentistry

JOHN INNES FRENCH, M.D. . . . . 2A Park St., Boston
Instructor in Materia Medica and Therapeutics

WILLIAM HERBERT GRANT, M.D. . . . 845 Boylston St., Boston
Instructor in Clinical Gynaecology

RICHARD FROTHINGHAM O'NEIL, A.B., M.D.
379 Beacon St., Boston
Demonstrator of Surgical Apparatus and Bandaging

HARRY GRAY CHASE, B.S. . . . . 2 Curtis Ave.
Assistant Professor of Physics, and Secretary of the Faculty of Arts and Sciences

BURLEIGH CHILDS GILBERT, D.D.S. . . . . Stoneham
Instructor in Clinical Dentistry

RALPH CLINTON LARRABEE, A.B., M.D., . 912 Beacon St., Boston
Instructor in Clinical Medicine and Haematology

JOHN SHEPARD MAY, M.D. . . . . 219 Warren St., Boston
Instructor in Obstetrics, and Assistant in Clinical Medicine

ELIZABETH ANGELA RILEY, M.D. . . . . 483 Beacon St., Boston
Instructor in Gynaecology and Abdominal Surgery

FRANK LEE DRUMMOND RUST, M.D. . 543 Boylston St., Boston
Assistant Professor of Ophthalmology

SAMUEL CHANDLER EARLE, A.M.
Assistant Professor of English 9 Electric Avenue, West Somerville

LAWRENCE BOYD EVANS, PH.D. . . . . 2 Dean Hall
Professor of History

HARRY HOMER GERMAIN, M.D. . . . . 4 Arlington St., Boston
Instructor in Clinical Surgery, and Assistant in Anatomy

JAMES WILLIAM HINCKLEY, M.D. . . 18 Huntington Ave., Boston
Instructor in Obstetrics

ERVIN ARTHUR JOHNSON, D.D.S. . . . 176 Federal St., Boston
Instructor in Clinical Dentistry

FRED DAYTON LAMBERT, A.M., PH.D. . . . . 16 Dearborn Road
Assistant Professor of Biology

HENRY CLAYTON METCALF, A.B., PH.D. . . . 92 Professors Row
Jackson Professor of Political Science

FREDERICK BOOTH STEVENS, D.D.S. . . Everett Sq., Hyde Park
Instructor in Clinical Dentistry

CHARLES CRAWFORD STROUD, A.B., M.D.
Medical Director of the Gymnasium, and Instructor in Physical Training Allen House, 37 Sawyer Ave.

CHARLES ST.CLAIR WADE, A.M. . . . . 16 Conwell Ave.
Professor of the Greek Language and Literature

THOMAS WHITTEMORE, A.B. . . . . Θ Δ Χ House, Tufts College
Professor of English, and Instructor in the History of Art

FRANK GEORGE WREN, A.M.* . . . . . 114 Professors Row
Walker Professor of Mathematics

ELWOOD TRACY EASTON, M.D. . . . . 871 Boylston St., Boston
Instructor in Ophthalmology

LUTHER GORDON PAUL, M.D. . . . . 657 Boylston St., Boston
Instructor in Clinical Surgery, and Assistant in Anatomy

* Absent on leave for first half-year.

GUY MONROE WINSLOW, A.B., PH.D. . . . . Auburndale
Instructor in Histology

HARRY CALDWELL PARKER, M.D. . . 317 Marlborough St., Boston
Instructor in Ophthalmology

ISIDORE EUGENE ROSENSTEIN REID, M.B., C.M.
Instructor in Anatomy 138 Chestnut Ave., Jamaica Plain

IRVING JOSIAH WETHERBEE, D.M.D. . 120 Boylston St., Boston
Instructor in Clinical Dentistry

LLEWELLYN ROOD PERKINS, B.S., A.B. . . . 72 Professors Row
Walker Special Instructor in Mathematics

WILLIAM RICHARD RANSOM, A.M. . . . . 101 Talbot Ave.
Assistant Professor of Mathematics

WILLIAM HOWELL REED, JR. . . . . 81 Walnut Ave., Roxbury
Instructor in German

LIZZIE MAUD CARVILL, A.B. . . . . 28 Highland Ave., Somerville
Instructor in Physical Training for Women

JAMES PROCTOR LOCKHART, D.M.D.
Instructor in Clinical Dentistry 837 Massachusetts Ave., Cambridge

WILLIAM LITTLEFIELD RIPLEY, M.D. . 249 Centre St., Newton
Instructor in Physiology

FREDERICK FINCH STRONG, M.D. . 178 Huntington Ave., Boston
Instructor in Electro-Therapeutics

GEORGE FRANCIS ASHLEY . . . . . 11 Laurel St., Somerville
Instructor in Drawing

CURTIS WILLIAM FARRINGTON, D.M.D.
Instructor in Clinical Dentistry 246 Huntington Ave., Boston

VARNEY ALBERT KELLEY, D.M.D. . . . . 21 Maple St., Danvers
Instructor in Clinical Dentistry

SIDNEY BURT SARGENT, D.M.D. . . . . Rockland
Instructor in Clinical Dentistry

RALPH WEBSTER RICHARDS, A.M. . . . . 16 Dearborn Road
Instructor in Geology

EDWIN BUTLER ROLLINS, B.S. . . . . 6 West Hall
Instructor in Electrical Engineering

CHARLES EDWARD STEWART, S.B.
Instructor in Shopwork 42 Chester Ave., Medford Hillside

JAMES IRWIN TUCKER, B.S. . . . . 46 Pearl St., Medford
Instructor in Civil Engineering

PHILIP MESERVE HAYDEN, A.B. . . . . Dean Hall, 6
Instructor in French

ARTHUR MURPHY, JR., A.M. . . . . 16 Dearborn Road
Instructor in Theoretical and Organic Chemistry

HENRY BRADFORD SMITH, A.B. . . . 58 Kirkland St., Cambridge
Instructor in Mathematics

LECTURERS, ASSISTANTS, AND OTHERS

WALTER IRVING BRIGHAM, D.D.S. . . . . South Framingham
Lecturer on Operative Dentistry

WALTER ELMORE FERNALD, M.D. . . . . Waverley
Clinical Lecturer in Mental Diseases

WILLIAM EASTMAN FAY, A.B., M.D. 366 Commonwealth Ave., Boston
Assistant in Clinical Medicine

ARTHUR PATTERSON CHADBOURN, A.B., M.D.
Assistant in Clinical Medicine 225 Marlborough St., Boston

GEORGE ARTHUR WEBSTER, M.D. . . . 419 Boylston St., Boston
Assistant in Anatomy

CHARLES HENRY WINN, A.M., M.D. . . 1474 Tremont St., Boston
Assistant in Clinical Medicine

FRANCIS JOSEPH WELLER, A.B., M.D. Hotel Nottingham, Boston
Assistant in Otology

ELMOND ARTHUR BURNHAM, A.B., M.D.
Assistant in Clinical Medicine 154 Huntington Ave., Boston

ROBERT MICHAEL MERRICK, M.D. . . 15 Adams St., Dorchester
Assistant in Clinical Medicine

HENRY FOWLER RANSFORD WATTS, M.D.
Assistant in Clinical Medicine 6 Monadnock St., Boston

LEON EDWARD WHITE, A.B., M.D. . . . 543 Boylston St., Boston
Assistant in Otology

JOHN PETER TREANOR, M.D. . . . . 3 Howes St., Dorchester
Assistant in Clinical Medicine

WILLIAM GRAY ADAMS, M.D. . . . . 101 Newbury St., Boston
Assistant Demonstrator of Anatomy

FREDERICK WINSLOW STETSON, A.B., M.D.
Assistant in Clinical Medicine 637 Dudley St., Boston

THOMAS JAMES O'BRIEN, PH.G., M.D. 1470 Tremont St., Roxbury
Assistant in Clinical Medicine

JOSEPH HENRY SAUNDERS, A.B., M.D. 217 Harvard St., Brookline
Assistant in Clinical Medicine

ADELAIDE OLGA CUSHING-LEARY, M.D.
Assistant in Pathology and Bacteriology 20 Sunset St., Roxbury

ARTHUR THORNTON LEGG, M.D. . . . . 535 Beacon St., Boston
Assistant in Orthopedics

JOHN SCOTT McLEOD, M.D. . . . . 113 Warren St., Roxbury
Assistant in Anatomy

WILLIS JOHNSON MIDDLETON, M.D. 661 Washington St., Quincy
Assistant in Anatomy

WALTER FREEMAN NOLEN, M.D. . . . . 535 Beacon St., Boston
Assistant in Anatomy

ALONZO KINGMAN PAINE, M.D. . . . . 43 Tremont St., Boston
Prosector in Anatomy

HOWARD DEXTER SMITH, B.S., A.M.
Assistant in Chemistry 11 Fairmount St., Medford Hillside

HERBERT MORLEY MORLEY, M.S. . . . . Dean Hall, 1
Assistant in Mathematics

CHESTER BRADSTREET STORY, A.B. . . . . Curtis Hall, 7
Assistant in English

CHANDLER MASON WOOD, A.M. . . . . West Hall, 17
Assistant in History

MELVILLE SMITH MUNRO, B.S. . . . . 59 George St., Medford
Assistant in Electrical Engineering

GEORGE LESLIE BIDWELL . . 95 Hyde Park Ave., Jamaica Plain
Assistant in Chemistry

RAY WILLIAM CLOUGH . . . . . E. Braintree, Vt.
Assistant in General Chemistry

Lecturers to the Divinity School

FREDERICK W. HAMILTON, A.M., D.D. . . . . Roxbury
HENRY W. RUGG, D.D. . . . . Providence, R. I.
BYRON GROCE, A.M., LITT.D. . . . . Roxbury
HAROLD WILLIAMS, A.B., M.D. . . . . Boston

Laboratory Assistants in the Medical and Dental Schools

CARL R. O'BRIEN . . . . . Chelsea
G. R. CALLENDER . . . . . Northfield
Anatomy

EDISON W. BROWN . . . . . Dorchester
JOHN M. KELLEY . . . . . Dorchester
LEON S. A. MEDALIA . . . . . Boston
Pathology and Bacteriology

LEO T. MYLES . . . . . Cambridge
FRANKLIN WELLES . . . . . Boston
GUY M. WINSLOW . . . . . Newton
MARION F. ALBRO . . . . . Providence, R. I.
WALTER H. YOUNG . . . . . E. Dedham
Histology

SYDNEY C. HARDWICK . . . . . Quincy
RALPH W. E. COLE . . . . . Franklin Falls, N. H.
ELWIN H. WELLS . . . . . Rumney, N. H.
FRANK W. WHITE . . . . . Arlington
Physiology

W. DACRE WALKER . . . . . Peabody
W. W. KINGSBURY . . . . . Walpole, N. H.
FRANK W. ROGERS . . . . . Dedham
CHARLES H. YOUNG . . . . . Woburn
MYRON L. MARR, B.S. . . . . Dorchester
Medical Chemistry

JOSEPH A. MEHAN . . . . . Lowell
CUSHMAN DAY . . . . . Boston
DANIEL E. KEEFE . . . . . Athol
ARDENNE A. STOTT . . . . . Reading
ERNEST D. HATCH . . . . . Boston
RAYMOND E. GATES . . . . . E. Dedham
General Chemistry

JOHN J. GIBBONS . . . . . Clinton
WILLIAM A. DUTCHER . . . . . Boston
Pharmacology

MARY WRIGHT RICHARDSON . . . . . Boston
Clerk in Dental Infirmary

SARAH ELIZABETH MILLER . . . . . Boston
Clerk in the Prosthetic Department

FRANCES WILDER . . . . . Boston
Matron in the Dental Operating Room

OTHER OFFICERS

HERBERT TRUE BROWN . . . . . Tufts College
Bursar

HARRY GRAY CHASE, B.S. . . . . 2 Curtis Ave.
Registrar

HELEN LOUISE MELLEN . . . . . 28 Professors Row
Librarian

ETHEL MUNROE HAYES, A.B. . . . . 252 Medford St.
Assistant Librarian

ISABEL HALL COOMBS, A.B. . . . . Stoneham
Assistant to the Secretary

CHARLES CRAWFORD STROUD, A.B., M.D.
Director of the Gymnasium Allen House, Sawyer Avenue

EDWARD ALLEN KNOWLTON . . . . . ΘΔΧ House
Assistant in Physical Training

EDWIN HENRY BENNETT . . . . . 31 Fairmount Ave.
Superintendent of Buildings

MRS. HARRIET ANNA TURNER
Matron of Metcalf Hall

MRS. JENNIE LOUISE PUFFER
Matron of Start House

Proctors

CHANDLER M. WOOD . . . . . West, 17
EDWIN B. ROLLINS . . . . . West, 6
PHILIP M. HAYDEN . . . . . Dean, 6
FRED W. THYNG . . . . . East, 10
CHESTER B. STORY . . . . . Curtis, 7

Russell Lecturer, 1905

FREDERICK WILLIAM HAMILTON, A.M., D.D. . . . . Boston

TUFTS COLLEGE STUDIES

Board of Editors

THE PRESIDENT, *Ex-Officio*

Professor Wade — Professor Dolbear
Professor Knight — Professor Kingsley

CURATORS OF BUILDINGS

Chapel . . . . . Professor Lewis
Ballou Hall . . . . . Professor H. G. Chase
Barnum Museum . . . . . Professor Kingsley
Gymnasium . . . . . Dr. Stroud
Miner Hall . . . . . Dean Leonard
Library . . . . . Miss Mellen
Robinson Hall . . . . . Professor Hooper
Chemical Laboratory . . . . . Professor Michael
Bromfield-Pearson Building . . . . . Professor Anthony

Standing Committees

OF THE FACULTY OF ARTS AND SCIENCES *

ADMISSIONS: Professor Denison, *Chairman;* Deans Shipman, Anthony, and Leonard; Sec'y H. G. Chase; Professors Wade, Fay, Lewis, Maulsby, Evans, Wren, Durkee, Dolbear, and Kingsley.

ABSENCES AND PETITIONS: Dean Shipman, *Chairman;* Deans Leonard and Anthony; Sec'y H. G. Chase.

COMMON INTERESTS: President Capen, *Chairman;* Dean Shipman, Professors Hooper, Kingsley, and Harmon.

SCHOLARSHIPS AND AIDS: President Capen, *Chairman;* Deans Shipman, Anthony, and Leonard; Sec'y H. G. Chase.

LIBRARY: Dean Shipman, *Chairman;* Professors Hooper, Woodbridge, Metcalf, and Wade.

PROGRAM: Professor Lewis, *Chairman;* Professors Anthony and Woodbridge, Assistant Professor H. G. Chase.

EXAMINATIONS: Professor Metcalf, *Chairman;* Professors Anthony and Denison.

CATALOGUE: Professor Maulsby, *Chairman;* Professor Anthony, and Dr. Williams (of the Medical School).

BOOKS AND SUPPLIES: Professor Lewis, *Chairman;* Professors Durkee, Anthony, and Wren.

MEMBERS ON THE PART OF THE FACULTY OF ARTS AND SCIENCES OF THE BOARD OF DIRECTORS OF ATHLETICS: Professor Wren, *Chairman;* Dr. Stroud, and Professor Harmon.

STUDENT ORGANIZATIONS: Professor Lewis, *Chairman;* Professors Woodbridge, Denison, Hooper, and Dr. Stroud.

INFORMATION: Professor Cushman, *Chairman;* Professors Denison and Wren.

USE OF COLLEGE BUILDINGS: Professor Hooper, *Chairman;* Professors Wren and Leonard, and Dr. Stroud.

* The Faculty of Arts and Sciences consists of the Faculties of the College of Letters, the Department of Engineering, the Graduate Department, and the Divinity School, constituting one body for the discharge of certain administrative functions.

THE
COLLEGE OF LETTERS

Faculty of the College of Letters

ELMER H. CAPEN, A.M., D.D., LL.D., PRESIDENT
Professor of Moral Philosophy and Political Economy

WILLIAM R. SHIPMAN, A.M., D.D., LL.D., DEAN
Goldthwaite Professor of Rhetoric, and Professor of Logic

HARRY G. CHASE, B.S., SECRETARY
Assistant Professor of Physics

CHARLES H. LEONARD, A.M., D.D.
Goddard Professor of Homiletics and Pastoral Theology

JEROME SCHNEIDER, PH.D.
Professor of Greek

EDWIN C. BOLLES, PH.D., D.D.
Dickson Professor of English and American History

AMOS E. DOLBEAR, M.E., PH.D., LL.D.
Professor of Physics

GEORGE M. HARMON, A.M., D.D.
Professor of Biblical Theology

CHARLES E. FAY, A.M., LITT.D.
Wade Professor of Modern Languages

WILLIAM G. TOUSEY, A.M., D.D.
Ryder Professor of Ethics and the Philosophy of Theism

GEORGE T. KNIGHT, A.M., D.D.
Packard Professor of Christian Theology

WARREN S. WOODBRIDGE, B.D., A.M.
Woodbridge Professor of Applied Christianity

J. STERLING KINGSLEY, S.D.
Professor of Biology

ARTHUR MICHAEL, A.M., PH.D.
Professor of Chemistry

HERBERT E. CUSHMAN, B.D., A.M., PH.D.
Professor of Philosophy

LEO R. LEWIS, A.M.
Professor of the History and Theory of Music

DAVID L. MAULSBY, A.M.
Professor of English Literature and Oratory

FRANK W. DURKEE, A.M.
Professor of Inorganic Chemistry

WILLIAM K. DENISON, A.M.
Professor of the Latin Language and Literature

LAWRENCE B. EVANS, PH.D.
Professor of History

HENRY C. METCALF, A.B., PH.D.
Jackson Professor of Political Science

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

FRANK G. WREN, A.M.
Walker Professor of Mathematics

THOMAS WHITTEMORE, A.B.
Professor of English, and Instructor in the History of Art

WILLIAM R. RANSOM, A.M.
Assistant Professor of Mathematics

FRED D. LAMBERT, A.M., PH.D.
Assistant Professor of Biology

CHARLES C. STROUD, A.B., M.D.
Instructor in Physical Training

RALPH W. RICHARDS, A.M.
Instructor in Geology

WILLIAM H. REED, A.M.
Instructor in German

ARTHUR MURPHY JR., A.M.
Instructor in Chemistry

CHESTER B. STORY, A.B.
Assistant in English

CHANDLER M. WOOD, A.M.
Assistant in History

COMMITTEE ON PROMOTIONS

Dean Shipman, *Chairman;* Professors Woodbridge, Durkee, Lewis, and Denison.

COMMITTEE ON CURRICULUM

Dean Shipman, *Chairman;* Professors Maulsby, Wren, Denison, and Evans.

Requirements for Admission

Candidates for the degree of Bachelor of Arts and of Bachelor of Divinity will be admitted to the College of Letters on passing an examination in two groups of subjects, known respectively as the Primary and the Secondary Group:—

The Primary Group *

Elementary English;
An Elementary Foreign Language, ancient or modern;
Elementary History;
Elementary Mathematics.

From a list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group, aggregating *fourteen* units for the course in arts and *six* for each of the courses in science, subject only to the following limitations:—

1. The fourteen units for the course in arts shall include those representing one advanced ancient language.

2. No subject classified as "advanced" shall be offered without the corresponding elementary subject; nor shall any language subject be counted as "elementary" in both the Primary and the Secondary Group.

* For detailed statement of the requirements in the Primary and the Secondary Group, see pages 43 to 53.

The secondary subjects and their assigned units are as follows:—

The Secondary Group *

Elementary:	Advanced:
[illegible]	English, 2
[illegible]	[illegible], 2
[illegible]	[illegible], 2
German, 2	French, 2
[illegible]	[illegible], 2
[illegible]	[illegible], 2
[illegible]	Advanced Algebra, 1
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Candidates for admission to the Engineering Department must have received adequate preparation in certain required subjects, as follows:—

Engineering: the Primary Group

Elementary English;
† One Elementary Foreign Language;
Algebra;
Plane and Solid Geometry.

From the following list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group aggregating three units:—

Engineering: the Secondary Group

Elementary History, 2	Mechanical Drawing, 1
Chemistry, 1 or 2	Freehand Drawing, 1
Physics, 1 or 2	Shop Work, 1

Detailed Information concerning the amount and character of the work demanded in preparation will be found on pages 43 to 53.

* Beginning with the college year 1906–07, entrance credit will be given in Music according to the plan recommended in the report of the New England Educational League, February 20, 1904. Copies of the recommendations may be had on application at the college office. Meanwhile entrance credit will be given on examination, in musical theory and practice, for work done during the high school period, whether in or out of school.

† Students will find it an advantage to present both French and German. Preparatory work in Modern Languages above the elementary requirement may be counted toward the degree of B.S. in Engineering (see pages 46 and 47). But advanced credit for a language not continued in college, or credit for more than three years' work, will be given only on examination.

The Primary Group

I. Elementary English.*

1. *Reading and Practice.*—A certain number of books will be set for reading. The candidate will be required to present evidence of a general knowledge of the subject matter, and to answer simple questions on the lives of the authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and will call for only a general knowledge of the books. In place of a part or the whole of this test, the candidate may be allowed to present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

The books set for this part of the examination will be:—

For 1903, 1904, 1905.—Shakespeare's Merchant of Venice and Julius Caesar; the Sir Roger de Coverley Papers in the Spectator; Goldsmith's Vicar of Wakefield; Coleridge's Rime of the Ancient Mariner; Scott's Ivanhoe; Carlyle's Essay on Burns; Tennyson's Princess; Lowell's Vision of Sir Launfal; George Eliot's Silas Marner.

For 1906, 1907, 1908.—Shakespeare's Macbeth and the Merchant of Venice; The Sir Roger de Coverley Papers in The Spectator; Irving's Life of Goldsmith; Coleridge's The Ancient Mariner; Scott's Ivanhoe and The Lady of the Lake; Tennyson's The Passing of Arthur, and one of the three Idyls, Elaine, or Enid, or Gareth and Lynette; Lowell's The Vision of Sir Launfal; George Eliot's Silas Marner.

2. *Study and Practice.*—This part of the examination presupposes the more careful study of each of the works named below. The examination will be upon subject-matter, form, and structure; and will also test the candidate's ability to ex-

* No candidate will be accepted in English whose work is notably defective in point of spelling, punctuation, syntax, idiom, or division into paragraphs.

press his knowledge with clearness and accuracy. The books set for this part of the examination will be:—

For 1903, 1904, 1905.—Shakespeare's Macbeth; Milton's L'Allegro, Il Penseroso, Comus, and Lycidas; Burke's Speech on Conciliation with America; Macaulay's Essays on Milton and Addison.

For 1906, 1907, 1908.—Shakespeare's Julius Caesar; Milton's L'Allegro, Il Penseroso, Comus, and Lycidas; Burke's Speech on Conciliation with America; Macaulay's Essays on Milton and Addison; Lincoln's Gettysburg Address.

II. One of the following Languages:

1. ELEMENTARY GERMAN.

The elementary examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *two* years. It will consist of two parts, which may be taken separately:—

(*a*) The translation at sight of ordinary German. In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least two hundred pages of classical and contemporary prose and verse, to be selected from such works as the following: Riel, *Kulturgeschichtliche Novellen;* Freytag, *Bilder aus der deutschen Vergangenheit*, especially *Aus dem Mittelalter* and *Aus dem Jahrhundert des groszen Krieges;* Kohlrausch, *Das Jahr* 1813; Schiller, *Der dreiszigjährige Krieg, Wilhelm Tell, Maria Stuart, Die Jungfrau von Orleans;* Goethe, *Hermann und Dorothea, Egmont, Iphigenie;* Lessing, *Minna von Barnhelm.* At least one-half of the amount read should be nineteenth-century prose. It is important that all the translation should be done into clear and idiomatic English.

(*b*) The translation into German of a passage of simple English prose.

A less extended knowledge of syntax than for advanced

German (see the Secondary Group) will be presupposed in the selection of the matter for translation.

2. ELEMENTARY FRENCH.

The elementary examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *two* years. It will consist of two parts, which may be taken separately:—

(*a*) The translation at sight of ordinary French. The passages set for translation will be suited to candidates who have read not less than five hundred duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors. It is important that all the translation should be done into clear and idiomatic English.

(*b*) The translation into French of a passage of easy English.

A less extended knowledge of syntax than for Advanced French (see the Secondary Group) will be presupposed in the selection of matter for translation.

3. ELEMENTARY LATIN.

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for three years. It will consist of two parts:—

(*a*) The translation at sight of passages of Latin prose and verse. The passages must be rendered into simple and idiomatic English.

(*b*) A thorough examination on Cicero's Orations against Catiline, II, III, IV, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms. This test will consist in part in writing simple Latin prose, involving words, constructions, and idioms found in the prescribed speeches.

The reading in preparation for Elementary Latin should include Caesar's Gallic War (Books I—IV), Cicero's four orations against Catiline, two thousand or more lines of Vergil, or of Ovid and Vergil. Equivalents will be accepted, but prose must not be substituted for verse.

4. ELEMENTARY GREEK.

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course of at least five periods a week for two years. It will consist of two parts, which cannot be taken separately:—

(*a*) The translation at sight of passages of simple Attic prose.

(*b*) A thorough examination on Book II of Xenophon's Anabasis, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms of the language.

Before taking the elementary examination the candidate should have read, in addition to the usual grammar work, at least four books of Xenophon's Anabasis, or an equivalent.

III. Elementary History.

Either 1 and 2, or 3 and 4, of the following:—

1. The history of Greece to the death of Alexander, with due reference to Greek life, literature, and art, as treated in the histories of Botsford, Oman, West, or Myers.

2. The history of Rome to the accession of Commodus, with due reference to Roman literature and government. Such texts as those of Morey, Botsford, West, or Allen will indicate the character of the work desired.

While the periods indicated above will be accepted as satisfying the entrance requirements in ancient history, it is strongly recommended that the study of the history of Greece be continued to the conquest of Greece by Rome, and that the history of Rome be pursued to the fall of the Western Empire.

This does not necessarily imply any increase in the time devoted to Greek and Roman history.

3. The history of England, with due reference to social and political development. Larned's History of England and Montgomery's Leading Facts of English History will indicate the character of the work expected.

4. The history and government of the United States.

Such texts as McLaughlin's History of the American Nation, Johnston's or Channing's History of the United States, and Fiske's Civil Government should be used.

It is recommended that students seeking admission to the College should offer Greek and Roman history rather than English and American history.

The elementary requirement in history implies one year's work of not less than five periods a week. Work in the text-book should be constantly accompanied by collateral reading. The attention of teachers is called to the Report of the Committee of Seven, published by the Macmillan Company, New York, under the title, "The Study of History in Schools."

IV. Elementary Mathematics.

A knowledge of the metric system, and ability to perform accurately the ordinary processes of arithmetic, are presumed. The examination will include:—

(*a*) Algebra, through quadratic equations, arithmetical and geometric progressions, ratio and proportion, and the binomial theorem for positive integral exponents; also

(*b*) Plane Geometry, including the solution of simple original exercises and numerical problems.

The Secondary Group *

The subjects and their values in entrance units are as follows:—

I. Advanced English. *Two entrance units.*

One of the following:—

1. A detailed study of a single period of English literature, and of not fewer than three authors belonging to it.

2. Old English (Anglo-Saxon): chiefly simple prose and grammar.

3. Chaucer: Prologue, Knight's Tale, and Nun's Priest's Tale, including vocabulary, inflection, and prosody.

* For music as an additional subject, see note at bottom of page 46.

II. Elementary German. *Four entrance units.*

Primary Group, II, 1, when not offered in the Primary Group.

III. Elementary French. *Four entrance units.*

Primary Group, II, 2, when not offered in the Primary Group.

IV. Elementary Latin. *Six entrance units.*

Primary Group, II, 3, when not offered in the Primary Group.

V. Elementary Greek. *Four entrance units.*

Primary Group, II, 4, when not offered in the Primary Group.

VI. Advanced German. *Two entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *three* years. It will consist of two parts, which may be taken separately:

(*a*) The translation at sight of standard German.

In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least five hundred pages of classical and contemporary prose and verse, to be selected from such works as those enumerated in Primary Group, II, 1, Elementary German (*a*). At least one-half of the amount read should be nineteenth-century prose.

(*b*) The translation into German of a passage of easy English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, the elements of word-formation, and the principal uses of prepositions and conjunctions; the essentials of syntax, especially the uses of modal auxiliaries and the subjunctive and infinitive modes. Proficiency may also be tested by direct questioning.

It is recommended that the candidate acquire the ability to

follow a recitation conducted in German and to answer in that language questions asked by the instructor.

VII. Advanced French. *Two entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *three* years. It will consist of two parts, which may be taken separately:—

(*a*) The translation at sight of standard French.

The passages set for translation will be suited to candidates who have read not less than one thousand duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors.

(*b*) The translation into French of a passage of English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, and a familiarity with the essentials of French syntax, especially the uses of modes and tenses, and also with the commoner idiomatic phrases. Proficiency may also be tested by direct questioning.

Careful attention should be paid to pronunciation and to the use of spoken French, that the candidate may at least acquire the ability to follow a recitation conducted in the language and to answer questions asked by the instructor.

VIII. Advanced Latin. *Two entrance units.*

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for four years. It will consist of two parts:—

(*a*) The translation at sight of passages of Latin prose and verse, with questions on the ordinary forms, constructions, and idioms, and on prosody. Simple and idiomatic English must be used in the translations.

(*b*) The translation into Latin prose of a passage of connected narrative.

The reading in preparation for advanced Latin should in-

DAVID L. MAULSBY, A.M.
Professor of English Literature and Oratory

FRANK W. DURKEE, A.M.
Professor of Inorganic Chemistry

WILLIAM K. DENISON, A.M.
Professor of the Latin Language and Literature

LAWRENCE B. EVANS, PH.D.
Professor of History

HENRY C. METCALF, A.B., PH.D.
Jackson Professor of Political Science

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

FRANK G. WREN, A.M.
Walker Professor of Mathematics

THOMAS WHITTEMORE, A.B.
Professor of English, and Instructor in the History of Art

WILLIAM R. RANSOM, A.M.
Assistant Professor of Mathematics

FRED D. LAMBERT, A.M., PH.D.
Assistant Professor of Biology

CHARLES C. STROUD, A.B., M.D.
Instructor in Physical Training

RALPH W. RICHARDS, A.M.
Instructor in Geology

WILLIAM H. REED, A.M.
Instructor in German

ARTHUR MURPHY JR., A.M.
Instructor in Chemistry

CHESTER B. STORY, A.B.
Assistant in English

CHANDLER M. WOOD, A.M.
Assistant in History

COMMITTEE ON PROMOTIONS

Dean Shipman, *Chairman;* Professors Woodbridge, Durkee, Lewis, and Denison.

COMMITTEE ON CURRICULUM

Dean Shipman, *Chairman;* Professors Maulsby, Wren, Denison, and Evans.

Requirements for Admission

Candidates for the degree of Bachelor of Arts and of Bachelor of Divinity will be admitted to the College of Letters on passing an examination in two groups of subjects, known respectively as the Primary and the Secondary Group:—

The Primary Group *

Elementary English;
An Elementary Foreign Language, ancient or modern;
Elementary History;
Elementary Mathematics.

From a list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group, aggregating *fourteen* units for the course in arts and *six* for each of the courses in science, subject only to the following limitations:—

1. The fourteen units for the course in arts shall include those representing one advanced ancient language.

2. No subject classified as "advanced" shall be offered without the corresponding elementary subject; nor shall any language subject be counted as "elementary" in both the Primary and the Secondary Group.

* For detailed statement of the requirements in the Primary and the Secondary Group, see pages 43 to 53.

The Secondary subjects and their assigned units are as follows: —

The Secondary Group *

ELEMENTARY	ADVANCED
Greek, 4	English, 2
Latin, 6	Greek, 2
French, 4	Latin, 2
German, 4	French, 2
Chemistry, 1	German, 2
Physics, 1	History, 2
Botany, 1 or 2	Advanced Algebra, 1
Zoology, 1 or 2	Trigonometry, 1
Geology, 1 or 2	Solid Geometry, 1
Physiology, 1 or 2	Chemistry, 1
	Physics, 1

Candidates for admission to the Engineering Department must have received adequate preparation in certain required subjects, as follows: —

Engineering: the Primary Group

Elementary English;
† One Elementary Foreign Language;
Algebra;
Plane and Solid Geometry.

From the following list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group aggregating three units: —

Engineering: the Secondary Group

Elementary History, 2	Mechanical Drawing, 1
Chemistry, 1 or 2	Freehand Drawing, 1
Physics, 1 or 2	Shop Work, 1

Detailed Information concerning the amount and character of the work demanded in preparation will be found on pages 43 to 53.

* Beginning with the college year 1906–07, entrance credit will be given in Music according to the plan recommended in the report of the New England Educational League, February 20, 1904. Copies of the recommendations may be had on application at the college office. Meanwhile, entrance credit will be given on examination, in musical theory and practice, for work done during the high school period, whether in or out of school.

† Students will find it an advantage to present both French and German. Preparatory work in Modern Languages above the elementary requirement may be counted toward the degree of B.S. in Engineering (see pages 46 and 47). But advanced credit for a language not continued in college, or credit for more than three years' work, will be given only on examination.

The Primary Group

I. Elementary English.*

1. *Reading and Practice.*—A certain number of books will be set for reading. The candidate will be required to present evidence of a general knowledge of the subject matter, and to answer simple questions on the lives of the authors. The form of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and will call for only a general knowledge of the books. In place of a part or the whole of this test, the candidate may be allowed to present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

The books set for this part of the examination will be:—

For 1903, 1904, 1905.—Shakespeare's Merchant of Venice and Julius Caesar; the Sir Roger de Coverley Papers in the Spectator; Goldsmith's Vicar of Wakefield; Coleridge's Rime of the Ancient Mariner; Scott's Ivanhoe; Carlyle's Essay on Burns; Tennyson's Princess; Lowell's Vision of Sir Launfal; George Eliot's Silas Marner.

For 1906, 1907, 1908.—Shakespeare's Macbeth and the Merchant of Venice; The Sir Roger de Coverley Papers in The Spectator; Irving's Life of Goldsmith; Coleridge's The Ancient Mariner; Scott's Ivanhoe and The Lady of the Lake; Tennyson's The Passing of Arthur, and one of the three Idyls, Elaine, or Enid, or Gareth and Lynette; Lowell's The Vision of Sir Launfal; George Eliot's Silas Marner.

2. *Study and Practice.*—This part of the examination presupposes the more careful study of each of the works named below. The examination will be upon subject-matter, form, and structure; and will also test the candidate's ability to ex-

* No candidate will be accepted in English whose work is notably defective in point of spelling, punctuation, syntax, idiom, or division into paragraphs.

press his knowledge with clearness and accuracy. The books set for this part of the examination will be:—

For 1903, 1904, 1905.— Shakespeare's Macbeth; Milton's L'Allegro, Il Penseroso, Comus, and Lycidas; Burke's Speech on Conciliation with America; Macaulay's Essays on Milton and Addison.

For 1906, 1907, 1908.—Shakespeare's Julius Caesar; Milton's L'Allegro, Il Penseroso, Comus, and Lycidas; Burke's Speech on Conciliation with America; Macaulay's Essays on Milton and Addison; Lincoln's Gettysburg Address.

II. One of the following Languages:

1. ELEMENTARY GERMAN.

The elementary examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *two* years. It will consist of two parts, which may be taken separately :—

(*a*) The translation at sight of ordinary German. In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least two hundred pages of classical and contemporary prose and verse, to be selected from such works as the following: Riel, *Kulturgeschichtliche Novellen;* Freytag, *Bilder aus der deutschen Vergangenheit,* especially *Aus dem Mittelalter* and *Aus dem Jahrhundert des grossen Krieges;* Kohlrausch, *Das Jahr* 1813; Schiller, *Der dreissigjährige Krieg, Wilhelm Tell, Maria Stuart, Die Jungfrau von Orleans;* Goethe, *Hermann und Dorothea, Egmont, Iphigenie;* Lessing, *Minna von Barnhelm.* At least one-half of the amount read should be nineteenth-century prose. It is important that all the translation should be done into clear and idiomatic English.

(*b*) The translation into German of a passage of simple English prose.

A less extended knowledge of syntax than for advanced

German (see the Secondary Group) will be presupposed in the selection of the matter for translation.

2. ELEMENTARY FRENCH.

The elementary examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *two* years. It will consist of two parts, which may be taken separately:—

(*a*) The translation at sight of ordinary French. The passages set for translation will be suited to candidates who have read not less than five hundred duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors. It is important that all the translation should be done into clear and idiomatic English.

(*b*) The translation into French of a passage of easy English.

A less extended knowledge of syntax than for Advanced French (see the Secondary Group) will be presupposed in the selection of matter for translation.

3. ELEMENTARY LATIN.

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for three years. It will consist of two parts: —

(*a*) The translation at sight of passages of Latin prose and verse. The passages must be rendered into simple and idiomatic English.

(*b*) A thorough examination on Cicero's Orations against Catiline, II, III, IV, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms. This test will consist in part in writing simple Latin prose, involving words, constructions, and idioms found in the prescribed speeches.

The reading in preparation for Elementary Latin should include Caesar's Gallic War (Books I—IV), Cicero's four orations against Catiline, two thousand or more lines of Vergil, or of Ovid and Vergil. Equivalents will be accepted, but prose must not be substituted for verse.

4. ELEMENTARY GREEK.

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course of at least five periods a week for two years. It will consist of two parts, which cannot be taken separately:—

(*a*) The translation at sight of passages of simple Attic prose.

(*b*) A thorough examination on Book II of Xenophon's Anabasis, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms of the language.

Before taking the elementary examination the candidate should have read, in addition to the usual grammar work, at least four books of Xenophon's Anabasis, or an equivalent.

III. Elementary History.

Either 1 and 2, or 3 and 4, of the following:—

1. The history of Greece to the death of Alexander, with due reference to Greek life, literature, and art, as treated in the histories of Botsford, Oman, West, or Myers.

2. The history of Rome to the accession of Commodus, with due reference to Roman literature and government. Such texts as those of Morey, Botsford, West, or Allen will indicate the character of the work desired.

While the periods indicated above will be accepted as satisfying the entrance requirements in ancient history, it is strongly recommended that the study of the history of Greece be continued to the conquest of Greece by Rome, and that the history of Rome be pursued to the fall of the Western Empire.

This does not necessarily imply any increase in the time devoted to Greek and Roman history.

3. The history of England, with due reference to social and political development. Larned's History of England and Montgomery's Leading Facts of English History will indicate the character of the work expected.

4. The history and government of the United States.

Such texts as McLaughlin's History of the American Nation, Johnston's or Channing's History of the United States, and Fiske's Civil Government should be used.

It is recommended that students seeking admission to the College should offer Greek and Roman history rather than English and American history.

The elementary requirement in history implies one year's work of not less than five periods a week. Work in the text-book should be constantly accompanied by collateral reading. The attention of teachers is called to the Report of the Committee of Seven, published by the Macmillan Company, New York, under the title, "The Study of History in Schools."

IV. Elementary Mathematics.

A knowledge of the metric system, and ability to perform accurately the ordinary processes of arithmetic, are presumed. The examination will include:—

(*a*) Algebra, through quadratic equations, arithmetical and geometric progressions, ratio and proportion, and the binomial theorem for positive integral exponents; also

(*b*) Plane Geometry, including the solution of simple original exercises and numerical problems.

The Secondary Group *

The subjects and their values in entrance units are as follows:—

I. Advanced English. *Two entrance units.*

One of the following:—

1. A detailed study of a single period of English literature, and of not fewer than three authors belonging to it.

2. Old English (Anglo-Saxon): chiefly simple prose and grammar.

3. Chaucer: Prologue, Knight's Tale, and Nun's Priest's Tale, including vocabulary, inflection, and prosody.

* For music as an additional subject, see note at bottom of page 48.

II. Elementary German. *Four entrance units.*

Primary Group, II, 1, when not offered in the Primary Group.

III. Elementary French. *Four entrance units.*

Primary Group, II, 2, when not offered in the Primary Group.

IV. Elementary Latin. *Six entrance units.*

Primary Group, II, 3, when not offered in the Primary Group.

V. Elementary Greek. *Four entrance units.*

Primary Group, II, 4, when not offered in the Primary Group.

VI. Advanced German. *Two entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *three* years. It will consist of two parts, which may be taken separately:

(*a*) The translation at sight of standard German.

In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least five hundred pages of classical and contemporary prose and verse, to be selected from such works as those enumerated in Primary Group, II, 1, Elementary German (*a*). At least one-half of the amount read should be nineteenth-century prose.

(*b*) The translation into German of a passage of easy English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, the elements of word-formation, and the principal uses of prepositions and conjunctions; the essentials of syntax, especially the uses of modal auxiliaries and the subjunctive and infinitive modes. Proficiency may also be tested by direct questioning.

It is recommended that the candidate acquire the ability to

follow a recitation conducted in German and to answer in that language questions asked by the instructor.

VII. Advanced French. *Two entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *three* years. It will consist of two parts, which may be taken separately:—

(*a*) The translation at sight of standard French.

The passages set for translation will be suited to candidates who have read not less than one thousand duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors.

(*b*) The translation into French of a passage of English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, and a familiarity with the essentials of French syntax, especially the uses of modes and tenses, and also with the commoner idiomatic phrases. Proficiency may also be tested by direct questioning.

Careful attention should be paid to pronunciation and to the use of spoken French, that the candidate may at least acquire the ability to follow a recitation conducted in the language and to answer questions asked by the instructor.

VIII. Advanced Latin. *Two entrance units.*

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for four years. It will consist of two parts:—

(*a*) The translation at sight of passages of Latin prose and verse, with questions on the ordinary forms, constructions, and idioms, and on prosody. Simple and idiomatic English must be used in the translations.

(*b*) The translation into Latin prose of a passage of connected narrative.

The reading in preparation for advanced Latin should in-

clude Caesar's Gallic War (Books I—IV); Cicero, seven orations, or six if the Manilian Law be included; Vergil and Ovid, six to ten thousand lines, including the first six books of the Aeneid. Equivalents will be accepted, but prose must not be substituted for verse.

A more extended knowledge of grammar will be expected than in the case of Elementary Latin. Practice in reading at sight, and a general training in the proper methods of reading, should form an important part of the preparation, from the very first.

IX. Advanced Greek. *Two entrance units.*

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course of five exercises a week, extending through at least three school years. The two parts of the examination may be taken separately:—

(*a*) The translation at sight of an average passage of Homer; with questions on ordinary forms, constructions, and idioms, and on prosody.

(*b*) The translation into Attic prose of a passage of connected English narrative. The passage set for translation will be based on some portion of the Greek prose works usually read in preparation for college.

Before taking the examination in Advanced Greek the candidate should have completed at least four books of Xenophon's Anabasis, or their equivalent in Attic prose, and six books in Homer's Iliad, or their equivalent in the Odyssey. It is recommended that Greek composition accompany all stages of the preparation, and that the pupil be practiced in reading Greek aloud from the beginning of his course.

X. Advanced History. *Two entrance units.*

One of the following:—

1. The History of Greece and Rome, as described on page 46, for those only who have offered English and American History as primary subjects.

2. The History of England and the United States, as described on page 8, for those only who have offered Greek and Roman History as primary subjects.

3. The History of Europe, taking France or Germany as the central object of study, from the Germanic invasions to 1648.

4. Any one of the primary subjects not offered as such, combined with a detailed study of a limited period within that field.

Each of these subjects requires one year's study of not less than five recitation-periods a week. Equivalents for the subjects outlined above will be accepted.

XI. Advanced Mathematics.

1. Plane Trigonometry, with its applications. *One entrance unit.*
2. Solid Geometry. *One entrance unit.*
3. Advanced Algebra. *One entrance unit.*

XII. Physics.

(*a*) ELEMENTARY. *One entrance unit.* The examination will be upon such elementary text-books as Gage's, Avery's, or Dolbear's, with emphasis upon Mechanics and Energy.

(*b*) ADVANCED. *Two entrance units.* In addition to (*a*), the candidate is required to present satisfactory evidence, by both certificate and record-book, of having completed a year's course of laboratory experiments in physics, of such grade as in Hall and Burgin's Text Book of Physics.

XIII. Chemistry.

(*a*) ELEMENTARY. *One entrance unit.* Preparation for this requirement presupposes a course in general inorganic chemistry (the non-metals) of not less than four periods a week for a year, in amount equal to that in An Introduction to the Study of Chemistry, by Ira Remsen, with experimental work in the non-metals equal in amount to that in Remsen's or Williams's Laboratory Manual. The experiments are to be performed by the students. It is well to present a certified laboratory note-book.

(*b*) ADVANCED. *Two entrance units.* The advanced requirement includes general inorganic chemistry, as in the elementary requirement, and in addition a course of not less than four periods a week for one year, devoted to the study of the metals. The amount must be equal to that in Remsen's text-book men-

tioned above, and involve experiments with the metals and their compounds, covering the ground of and equal in number to those in one of the above-mentioned laboratory manuals.

XIV. Natural History. *One or two entrance units.*

In Natural History the examiners give more weight to the character of the work than to the time spent; but at least five periods a week for half a year must have been given to each subject presented, and of this at least half should be devoted to laboratory work. Certified copies of laboratory note-books must be presented. In Botany and Zoology the work should be on structural lines, and detailed study should have been made of at least ten types. Little credit will be allowed for time spent in the analysis of plants or the identification of birds or insects. The following are the subjects which may be presented for admission, the names of the authors of text-books in connection with each being an index of the character of the work expected. Each subject is awarded one or two units, but not more than two subjects will be accepted.

1. Botany: Atkinson, Bergen, Bessey, Campbell, Coulter, Setchell, Spaulding.
2. Zoology: Boyer, Colton, Kellogg, Kingsley, Needham.
3. Physiology: Huxley, Martin, Peabody.
4. Geology: Dana, Leconte, Brigham, Tarr.

XV. Freehand Drawing. *One entrance unit.*

The examiner requires evidence of ability to make an accurate outline or shaded drawing from a group of geometric models, or a shaded drawing from a simple cast. Such a knowledge of the fundamental principles of perspective is required as shall enable the student to draw a simple geometric figure without the use of a model. Certified drawings must be submitted, and the student may be examined on all points in doubt.

XVI. Mechanical Drawing. *One entrance unit.*

Accuracy and neatness in drawing is of the first importance, and no amount of work will make amends for neglect in these respects. The student must be familiar with the use of ordinary

instruments, and able to solve geometrical problems with accuracy and rapidity. He must also be practiced in the drawing of the ellipse, the parabola, and the hyperbola, and have an elementary knowledge of projection. The suggested course is included in the first fifty-seven pages of Anthony's Elements of Mechanical Drawing. Certified work of the student must be presented, and he may be examined on all points in doubt.

Advanced standing is given in this subject only on examination.

XVII. Shopwork. *One entrance unit.*

The applicant should present satisfactory evidence of familiarity with tools and materials used in the ordinary processes of Wood-work, or Metal-work

Wood-work includes carpentry, turning, and pattern work. It requires a thorough knowledge of the sharpening, adjustment, and use of the tools, and ability to work from drawings.

Metal-work includes chipping, filing, and the use of machine tools, at the bench and the lathe. Whenever possible, the applicant should present models made by himself and certified by his instructor.

Advanced standing is given in this subject only on examination.

GENERAL INFORMATION RELATING TO ADMISSION

The regular examination for admission begins on the day after Commencement, and continues through the two following days. A second examination is held on the Monday, Tuesday, and Wednesday preceding the beginning of the College year.

The examination begins at 9 o'clock A.M. on each of these days. The assignment of examination subjects appears in the calendar, pages 8 and 9.

At the regular examination in June those who will be candidates for admission to the Freshman class one or two years later may present themselves for examination in the subjects of the Primary Group, and in others upon which their teachers may certify that they are adequately prepared. They will receive cer-

tificates of the subjects in which they pass, such subjects to be credited to them when they appear for their final examinations.

For admission to advanced standing an examination must be well sustained both in the preparatory studies and in the studies in which the candidate desires credit for advanced standing.

Students entering on examination are required to register at the office of the Registrar before taking their examinations. Those entering on certificate are required to register before noon on the opening day of the College year.

A fee of five dollars must be paid in advance by every candidate who is examined at any other place than the College.

Admission by Certificate.—Certificates covering the preparatory work of candidates for admission are received in lieu of examination only from schools of New England that have been approved by the New England College Entrance Certificate Board. The institutions represented upon the board are Amherst College, Boston University, Bowdoin College, Brown University, Dartmouth College, Mount Holyoke College, Smith College, Tufts College, the University of Maine, Wellesley College, and Wesleyan University. Application for recognition upon the list of approved schools, when made to the Faculty of Tufts College, will be referred to the *Secretary of the Board, Professor N. F. Davis, 159 Brown St., Providence, R. I.*

Applications must be received before April first, in order that a school may be placed on the approved list for the next academic year.

Each certificate must cover a preparatory course of not less than four full years of school work, which must have been in approved schools, though not necessarily continuously in one school. It must contain complete answers to such questions as may be proposed by the several examiners.

Certificates should be in the hands of the Registrar of the College at least one month before the opening of the College year.

Blank forms for certificates will be sent upon request made to the *Registrar of the College, Tufts College, Massachusetts.*

Requirements for Degrees

Students may enter upon their work in the courses of Liberal Arts as candidates for the degree of Bachelor of Arts, or Bachelor of Science. In any case the ground of promotion and of graduation is the intellectual attainment of the individual student, not a fixed requirement of a certain number of years of study.

The plan of study offered to the student is at once liberal, controlled, and elastic. It combines the essentials of the general culture which is the prime object of the undergraduate college course with an opportunity for the development of the individual on the lines to which he is especially adapted, and for preparation looking to university and professional study. Students determine the general direction of their work by the choice of major department. They are thereby brought into personal advisory relations with their respective major instructors, under whose guidance they arrange their programs with reference to their individual needs and aims. All work actually accomplished by the student in regular standing counts toward the attainment of the degree. The period within which the degree may be attained depends upon the industry and ability of the individual student.

SYNOPSIS OF THE REQUIREMENTS FOR A.B.*

(1) The requirement for the degree of Bachelor of Arts is the satisfactory completion of subjects aggregating one hundred and twenty-eight term hours.

* Each department offers a series of subjects for study. The unit indicating the requirements is the *term hour*, which represents a subject pursued one hour a week for one half-year. Thus a subject calling for three hours a week for one term represents a requirement of three term hours; if it calls for three hours a week for one year, or two terms, the requirement in that subject is six term hours.

(2) The program of prescribed studies is as follows:—

	Term Hours
Languages (Latin, Greek, French, German, Hebrew: each student to take *three*)	18
English	6
Mathematics	6
Physical Science (Physics, Chemistry, Biology; each student to take *one or two*)	12
Mental and Moral Science* (each student to take *two*)	12
Physical Training	2
A total of	56

The requirements are by groups, not by special subjects, and in each group except English and Physical Training some choice is allowed the student.

(3) The program of the student in the first year will be made up from the prescribed groups.

(4) At the end of the first year the student is required to choose a major department, in which he must complete, before graduation, work amounting to eighteen term hours. He may offer work already done in that subject in some one of the prescribed groups as a part of the eighteen hours which he is required to give to his major department, but no subject indicated in the catalogue as elementary can be counted in such work.

(5) The student shall further complete eighteen term hours in subjects designated as collateral with his major subject; that is, subjects tending to strengthen and assist his work in his major.

(6) The remaining term hours of the required aggregate are to be made up by the election of the student from the various subjects offered, limited only by special restrictions applied to certain subjects. The number of the remaining term hours is thirty-six, unless, as occasionally happens, the same work counts

* Of the three departments, Philosophy, Political Science, and History and Public Law, the student must take work in at least two—six term hours in each.

both as prescribed and as major work. In such case, the number of elective hours is proportionately increased.

(7) Upon the satisfactory completion of the aggregate requirement, the student is entitled to receive the Bachelor's degree, but no student shall be granted a degree in less than four years of residence, unless he shall have obtained Grade B as an average for his entire work.

Summary

	Term Hours
Prescribed work	56
Major department	18
Collateral subjects	18
Elective *	36
	128

For B.S.

The requirement for the degree of Bachelor of Science is the satisfactory completion of one hundred and twenty-eight term hours, according to the program for the General Science Course, the Special Course in Biology or in Chemistry, and the Medical Preparatory Course. The specialized character of these courses leaves only a small allowance of time outside the prescribed subjects for free election.

The requirements for the degree of Bachelor of Science in Engineering are given in connection with the detailed statement of the Department of Engineering.

* An acceptable Commencement part counts as an elective in the second half of the Senior year. See also the second half of paragraph (6), above.

Departments of Instruction

MAJOR DEPARTMENTS

Any of the following may be chosen as major departments:

ENGLISH	POLITICAL SCIENCE
GERMAN	MATHEMATICS
FRENCH	PHYSICS
LATIN	CHEMISTRY
GREEK	BIOLOGY
PHILOSOPHY	ENGINEERING
HISTORY AND PUBLIC LAW	

In the subjoined statement of the subjects offered in the different departments, the name of the major instructor is that given at the head of each department that offers major work. In other cases the name is given of the instructor in general charge of the department. When two or more names appear, major students will be guided by the usage of the department. Names of instructors in charge of each subject are appended to the brief statement of the subject itself.

Subjects enclosed in brackets will not be given during the current year. In many cases alternates are indicated, which fill their places in the program for this year. The credit is in term hours equivalent to the number of program hours a week assigned to each subject, unless otherwise indicated. Subjects not described as half-yearly extend through both terms. Subjects that continue through only one half-year are indicated by letters in parenthesis following the proposed hour: thus (F) means "first half-year," (S) means "second half-year."

Subjects marked with an asterisk (*) will not be counted for honors. Subjects marked with a double asterisk (**) will be counted for honors only when special conditions are complied with.

A tabular view of the program of hours accompanies the subjoined statement of the several departments. No two subjects assigned to the same hour can be taken simultaneously by any student.

ENGLISH

PROFESSOR SHIPMAN, PROFESSOR MAULSBY, AND PROFESSOR WHITTEMORE

The work of the department of English includes the theory and practice of composition and the study of literature.

English is required for one year or six term hours. In the first half of the first year the purpose of the instruction in composition is to aid the student to write with clearness and correctness. The aim is also to teach the other fundamentals of rhetoric. In the second half-year the general subject of expression is considered, with special reference to English composition.

In the study of literature, intelligent appreciation of the author's thought and of his characteristic mode of expression is the immediate result held in view. Biographical and philological details, the effect of environment, and the mass of published criticism that clusters about the great names are not neglected, although given a subordinate place. The method at first pursued demands attentive reading of more than can be considered in the class-room, frequent written expression of literary judgment, and occasional investigation of topics not otherwise treated. The library contains multiple copies of many of the authors read. Whether or not the period studied makes special study of linguistic forms necessary, in all subjects the thought-content is regarded as of prime importance. In literary subjects, composition is required as an essential part of the work.

SUBJECTS

*1. The Theory and Practice of Composition. Lectures, themes, conferences. *Tu., Th., Sat., 10.45.* (F)

PROFESSOR MAULSBY AND MR. STORY.

*2. A Study of Expression. Lectures, readings, themes, conferences. *Tu., Th., Sat., 10.45.* (S)

PROFESSOR WHITTEMORE AND MR. STORY.

*8. The Theory and Practice of Composition. Text-book, themes, conferences. *Three hours, to be arranged.* (F) PROFESSOR SHIPMAN.

English 8 is designed for students who fail to do satisfactory work in English 1 and 2.

*5. Argumentative Composition, a study of its requirements as observed by successful writers, with constant practice by the student. *Tu., Th., 3.00.* (F) *Counting as three hours.* PROFESSOR SHIPMAN.

[7. English Versification. Study of poetic forms and practice in poetic composition. *Tu., Th., Sat., 10.45.* (S) PROFESSOR MAULSBY.]

10. The English Bible. *Mon., Wed., Fri., 11.45.* PROFESSOR WHITTEMORE.

*11. General View of English Literature. The study of representative masterpieces. Lectures, text-book, and required reading. *Three hours, to be arranged; probably Tu., Th., Sat., 8.45.* (S) PROFESSOR MAULSBY AND PROFESSOR WHITTEMORE.

English 11 is designed as an introduction to the study of special periods. It is intended primarily for Freshmen and Sophomores. Although not counted for honors, it will be required of students making English their major subject.

**12. American Literature. Lectures, required reading, special topics, essays. *Mon., Wed., Fri., 2.00.* PROFESSOR MAULSBY.

[13. The English Romantic Movement in Poetry. Lectures, reading, brief critical essays. *Tu., Th., Sat., 8.45.* (F) PROFESSOR MAULSBY.]

[14. Poets of the Victorian Era. Lectures, reading, individual treatment of authors not studied in the class. *Tu., Th., Sat., 8.45.* (S) PROFESSOR MAULSBY.]

[15. Prose of the Nineteenth Century. Lectures, reading, brief critical essays. *Mon., Wed., Fri., 11.45.* PROFESSOR WHITTEMORE.]

[16. Milton and his Time. Lectures, readings, brief critical essays. *Tu., Th., Sat., 10.45.* (F) PROFESSOR WHITTEMORE.]

17. Shakespeare. Reading of selected plays, lectures, quizzes. *Mon., Wed., Fri., 8.45.* (F) PROFESSOR MAULSBY.

18. Shakespeare. Reading of selected plays, lectures, brief critical essays. *Mon., Wed., Fri., 8.45.* (S) PROFESSOR WHITTEMORE.

English 17 should precede English 18.

[19. Chaucer. Study of forms and pronunciation, reading of selections from the Canterbury Tales and the minor poems. *Mon., Wed., Fri., 10.45.* PROFESSOR MAULSBY.]

English 19 may be dropped at the end of the first half-year.

[**20. Anglo-Saxon. Study of the grammar, and the reading of prose selections, during the first half-year. During the second half-year, Beowulf will be read. *Mon., Wed., Fri., 10.45.* PROFESSOR MAULSBY.]

English 20 may be dropped at the end of the first half-year.

23. The Short Story. Examples, and composition. *First half-year. Counting as three hours.* PROFESSOR WHITTEMORE.

[25. Development of the English Drama. *Mon., Wed., Fri., 9.45.* PROFESSOR MAULSBY.]

[26. Development of the English Novel, in the eighteenth and nineteenth centuries. *Mon., Wed., Fri., 9.45.* PROFESSOR MAULSBY.]

27. Homiletics. The Idea and Structure of the Sermon. Homiletic analysis of texts taken from the Bible; study of the sermons of eminent preachers with respect to literary form, expression, and range of illustration. Helps to sermon preparation from studies in character and literature. *Tu., Th., Sat., 11.45.* PROFESSOR LEONARD.

28. Seminary in Emerson. *Counting as six term hours for the year. Hours to be arranged.* PROFESSOR MAULSBY.

English 28 is open only to advanced students of English.

ORATORY

PROFESSOR MAULSBY AND MR. STORY

It is intended that the study of oratory shall be of practical benefit to the general student, whether or not he looks to professional pursuit of the art. Exercises are practiced in correct breathing, the production of tone, and in gesture; moreover, individual faults are pointed out and remedies suggested. The work in Oratory 1 aims at securing reading that shall be intelligent, natural, and forcible. In this subject the principles that underlie all successful public speaking are indicated, and, so far as possible, these principles are applied in practice. In the advanced subjects opportunity is offered for carrying farther the reading of literature, or of preparing and delivering original speeches. In connection with oratory as a means of persuasion it is urged that students take related subjects in English composition, as English 5. In all classes, frequent individual conferences are held, as an essential part of the work.

1. Study of the voice; enunciation and pronunciation; attitude and gesture. *Th., 2.00.* PROFESSOR MAULSBY AND MR. STORY.

2. Reading of standard prose and verse. *One hour a week, to be arranged.* PROFESSOR MAULSBY AND MR. STORY.

3. Reading of oratorical selections. The preparation and delivery of original speeches. *One hour a week, to be arranged.* PROFESSOR MAULSBY AND MR. STORY.

4. Extemporaneous speaking. The principles of debate. *One hour a week, to be arranged.* PROFESSOR MAULSBY AND MR. STORY.

[7. The History of Oratory. Lectures, occasional papers, and prescribed reading. *Tu., Th., 3.00.* (S) PROFESSOR MAULSBY.]

The purpose of Oratory 7 is to furnish, by a review of the work of the great orators, both incentive and knowledge to those interested in public speaking.

GERMAN

PROFESSOR FAY

The aim of the department is twofold, according as the student has entered with the elementary or the advanced requirement. In the former case it is to lead him in the briefest possible time to such a mastery of the language as will enable him to use it as a source of information and medium of literary culture; where this preliminary work has already been done, to afford this literary culture itself, together with such historical and linguistic knowledge as may properly accompany advanced work in a literary department. Hence, in the elementary subjects, facility and accuracy of translation are sought by means of copious reading and careful grammatical drill; in the intermediate year the classic masterpieces are read for their own sake, together with such historical material as will throw light upon the epoch in which they were written or with which they deal; in the advanced work the systematic study of the history of the literature is undertaken, and opportunity is afforded for acquiring a knowledge of the earlier literary forms. Composition forms an important element in the instruction. Though no attempt is made to teach the student to speak the language, he is trained from the outset to hear it and to understand it when spoken, chiefly for the sake of the reflex influence of such practice upon pronunciation.

Six consecutive subjects are offered. While it is not impossible to take them all within the four college years, the scheme is based upon the supposition that the earlier subjects will have been taken in the preparatory school.

SUBJECTS

*1. Elementary German. Joynes-Meissner Grammar, with Lewis's Exercises; Hewitt's German Reader; Hatfield's Lyrics and Ballads. *Mon., Wed., Fri., 9.45.* MR. REED.

German 1 is the equivalent of the entrance requirement in Elementary German, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Review of grammatical principles, especially with reference to syntax. Reading of modern prose and poetry, such works as Wildenbruch, Das edle Blut; Gerstäcker, Irrfahrten; Seume, Mein Leben; Ebner-Eschenbach, Die Freiherren von Gemperlein; Fulda, Der Talisman. *Mon., Wed., Fri., 8.45.* MR. REED.

German 2, when taken by entering students, presupposes two years' study of the language in the preparatory school. It is possible for a student who has done with distinction the work of German 1, and who shall do a prescribed amount of outside reading, to omit this subject and enter German 3.

**3. First half-year: the rapid reading of modern prose; contemporary authors. Second half-year: introduction to the classic authors: Lessing, Minna von Barnhelm; Schiller, Die Jungfrau von Orleans; Goethe, Hermann und Dorothea. *Tu., Th., Sat., 8.45.* PROFESSOR FAY.

For entering students German 3 presupposes three years of preparatory study. Either half-year may be counted as a half-subject.

**3B. German Composition. First half-year: Stein's Exercises, dictation, conversation. Second half-year: Buchheim's Exercises, oral and written translation into German, and conversation. *Tu., Th., 9.45.* MR. REED.

German 3B is offered to students who have satisfactorily completed German 2, or its equivalent.

4. Schiller and Goethe. Maria Stuart; Wallenstein; Egmont; Robertson's Correspondence between Goethe and Schiller; lyrics; collateral reading in historical prose. *Tu., Th., Sat., 11.45.* MR. REED.

German 4 is open to entering students who have had four years of preparatory study, or who, having passed with distinction the entrance examination in Advanced German, also pass with credit a special examination in

advanced grammar and sight translation. Juniors and Seniors whose major department is German may be permitted to take 4 and 5 in the same year.

5. Advanced reading in Lessing and Goethe. Nathan der Weise, Emilia Galotti, Laokoon; Tasso, Iphigenie, Faust, Parts I and II, with collateral reading. *Mon., Wed., Fri., 10.45.* PROFESSOR FAY.

6. History of German Literature, with illustrative works for leading epochs. Middle High German: Bachmann, Mittelhochdeutsches Lesebuch. *Mon., Wed., Fri., 8.45.* PROFESSOR FAY.

FRENCH

PROFESSOR FAY AND PROFESSOR LEWIS

The plan and scope of the department are, in general, the same as those of the Department of German, to the statement of which the student is referred. Six consecutive subjects are offered.

SUBJECTS

*1. Elementary French. The essentials of grammar, with composition; Grandgent's Grammar; a French reader; reading of short works of modern authors in prose and verse. *Mon., Wed., Fri., 9.45.* PROFESSOR LEWIS.

French 1 is the equivalent of the entrance requirement in Elementary French, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Review of grammatical principles, especially with reference to syntax; exercise in composition; vocabulary practice; reading of modern fiction and drama, such as Merimée's Colomba and Sandeau's Mademoiselle de la Seiglière. *Mon., Wed., Fri., 8.45.* PROFESSOR LEWIS.

French 2, when taken by entering students, presupposes two years' study of the language.

**3. Reading of modern authors (Thiers, Taine, de Vigny); introduction to seventeenth-century classics (Corneille, Racine, Molière). Review of grammatical principles, with advanced vocabulary practice. *Tu., Th., Sat., 8.45.* PROFESSOR LEWIS.

For entering students French 3 presupposes three years of preparatory study. Either half-year may count as a half-subject.

**3B. French Composition. Plœtz, Nouvelle grammaire française and Cours gradué de thèmes; brief essays and dictation. *Tu., Th., 9.45.* PROFESSOR FAY.

French 3B is offered to students who have satisfactorily completed French 2 or its equivalent. It is desirable that at least one course in German should have been taken.

4. Literature and Manners of the Seventeenth Century. Crane's Société Française au XVIIe Siècle; Molière, Les Précieuses Ridicules, Les Femmes Savantes; Boileau, Les Héros de Roman; Madame de Sévigné; Madame de La Fayette; collateral reading from modern critics. *Mon., Wed., Fri., 2.00.* PROFESSOR FAY.

French 4 is open to entering students who have had four years of preparatory study of the language, or who, having passed with distinction the entrance examination in Advanced French, also pass with credit a special examination in advanced grammar, composition, and sight translation. Juniors and Seniors whose major department is French may be permitted to take 4 and 5 in the same year.

5. Literature of the Eighteenth and Nineteenth Centuries. First half-year: the drama, poetry, the novel, the philosophical essay, and criticism. Second half-year: introduction to the history of French literature, presented by lectures and collateral reading. *Mon., Wed., Fri., 3.00.* PROFESSOR LEWIS.

Either half-year may count as a half-subject.

[6. A systematic study of French literature from the earliest times to the middle of the nineteenth century. The manuals of Petit de Julleville and Brunetière will be read, together with illustrative texts for the several epochs, from which some period will be chosen for more detailed study. *Mon., Wed., Fri., 9.45.* PROFESSOR FAY.]

ITALIAN

PROFESSOR FAY

The work offered in Italian is open to those only who have had two years of college study in French, or its equivalent. With such previous training, the student is able to acquire with rapidity a reading knowledge of the language, and thus to become acquainted within the year with the characteristics of contemporary and classic literature. This subject is presented in alternate years.

SUBJECT

1. Grandgent's Grammar and Composition; Bowen's Reader; Maffei, Merope; Dante, Divina Commedia (Scartazzini's edition). *Tu., Th., Sat., 10.45.* PROFESSOR FAY.

LATIN

PROFESSOR DENISON

The aim of the department of Latin is to lead students to a thorough appreciation of a language and people that have had

profound influence on modern life and literature. The department offers a wide range of reading, which should impart to the faithful student not merely a greater accuracy, a greater power to make fine distinctions and observe small details, but also a broader general culture. Considerable time is devoted to reading at sight. The attention of students is directed constantly to the history, archaeology, art, public and private life, and religion of the Roman people, as well as to the formation and structure of their language and its relation to other languages. Due emphasis is laid on the connection between ancient and modern life and thought. The various reading courses are supplemented with lectures on appropriate topics, and are illustrated from time to time with the stereopticon. Latin 1, 2, either 3 or 4, and three composition courses are offered every year, and a number of other subjects, such as Latin 8, 9, and 10, are given, with due announcement, at regular but longer intervals. Courses 3, 4, 7, and all designated by numbers above 7, as well as all subjects in Classical Archaeology, are suitable for graduate students.

SUBJECTS

*1. Cicero, De Senectute, or De Amicitia; Vergil, Eclogues; selections from Latin poets; Livy, Books I and II, or XXI and XXII; reading at sight; lectures on suitable topics. *Tu., Th., Sat.: Division (a), 8.45; Division (b), 9.45.* PROFESSOR DENISON.

Latin 1 is introductory to all later subjects. Latin 5 is designed primarily for students of Latin 1 who wish for work in composition.

2. Pliny, selected letters; Petronius, Cena Trimalchionis; Horace, Odes and Epodes; Tacitus, Germania or Agricola; reading at sight; lectures on suitable topics. *Mon., Wed., Fri., 3.00.* PROFESSOR DENISON.

Latin 2 is open to students who have completed Latin 1.

3. Juvenal, principal Satires; Martial, selected Epigrams; Suetonius, selections; Tacitus, selections from the Annals; reading at sight. These authors will be studied with special reference to the information they afford concerning the history and life of the early empire. *Mon., Wed., Fri., 11.45.* PROFESSOR DENISON.

[4. Horace, Satires and Epistles; Plautus, two plays; Cicero, selected letters; reading at sight. *Mon., Wed., Fri., 11.45.* PROFESSOR DENISON.]

Subjects 3 and 4 will be given in alternate years, and are designed for those who have completed Latin 2, or its equivalent. They may, by

special arrangement with the instructor, be taken as half-subjects in either half-year.

*5. Latin Composition: translation of English narrative, based in part on the prose authors read in Latin 1, with which it may be taken most profitably. *Tu.*, *2.00.* PROFESSOR DENISON.

6. Latin Composition. Latin 6 is open only to students who have completed Latin 5. In it particular attention is paid to idiom. By reason of the variation of the work from year to year, the course may be taken a second time with due credit. *Th.*, *2.00.* PROFESSOR DENISON.

7. Latin Composition. Original essays in Latin. Study of selections of prose as models. Reading at sight. *One hour a week.* PROFESSOR DENISON.

[8. Reading course, to be announced later. *Three hours a week.* (F) PROFESSOR DENISON.]

9. Catullus and the Elegiac Poets, Tibullus, Propertius, and Ovid. *Three hours a week.* (S) PROFESSOR DENISON.

[10. Lucretius, selections; Vergil, Georgics; Seneca, Medea. *Three hours a week.* (S) PROFESSOR DENISON.]

Latin 8, 9, and 10 are half subjects, and are given, one each year, in regular rotation. They are open to students who have completed Latin 1, but are intended to be a supplement, not a substitute, for 2, 3, and 4. Those who wish to widen the range of their Latin reading will find these subjects suited to that end. The authors selected will be studied mainly from a literary point of view.

NOTE:—The attention of Greek and Latin students is called to related subjects listed under Classical Archaeology, pages 68 and 69.

GREEK

PROFESSOR SCHNEIDER AND PROFESSOR WADE

The aim of the department is to treat the Greek language not merely as a disciplinary instrument, but as a factor in the broadest and most liberal culture. Throughout the course the practice of reading at sight is encouraged, and especial effort is made to develop such facility that the student may resort with pleasure to the masterpieces of the Greek language, and find in them the delights and inspirations of a noble literature.

To this end also considerable attention is paid to the style and literary characteristics of the authors read. The relations of Greek to the Latin, German, and English languages are dis-

cussed, and the course is shaped to develop, discipline, and enrich the linguistic resources of the student. Reading without translation is encouraged from the beginning. Incidentally, studies are made of the customs and daily life of the people. Discussion relative to the laws, philosophy, and religion of the Greeks is introduced, and some attempt is made to exhibit the indebtedness of modern civilization to Hellenism.

SUBJECTS

*1. Elementary. Goodwin's Grammar; Xenophon, Anabasis; Homer. *Double subject. Daily, 9.45.* PROFESSOR WADE.

Greek 1 is intended for students entering without Greek and wishing to begin the study of that language. It is assumed that their previous training in linguistic studies will enable them to proceed rapidly and accomplish in one year all the work usually done in preparation for college. This subject may be taken (without credit) as a normal course by advanced students, on consultation with the instructor.

**2. Xenophon, Symposium; Plato, Apology; Homer; Euripides, one play. *Mon., Wed., Fri., 2.00.* PROFESSOR WADE.

Greek 2 is for students who have passed Greek 1, or the entrance requirements in Greek.

3. Herodotus, Book VIII; Plutarch, Life of Themistocles; Thucydides, portions of Book I; Aeschylus, the Persians; Sophocles, Antigone; Euripides, Alcestis. *Tu., Th., Sat., 11.45.* PROFESSOR WADE.

4. Theocritus, Idylls and Epigrams; Pindar, Olympian and Pythian Odes; Tyler's Selections from Greek Lyrics; reading at sight in the Odyssey. *Tu., Th., Sat., 8.45.* PROFESSOR SCHNEIDER.

Greek 4 is open to those who have completed Greek 3. Much attention is paid to the development of Greek lyric poetry, and the various theories of rhythm and metre are discussed. Lectures on appropriate topics are given in connection with the work.

5. Plato, Symposium; Aristotle, Ethics, Books I-IV, or Politics; reading at sight in Herodotus and Lucian. *Tu., Th., Sat., 9.45.*
PROFESSOR SCHNEIDER.

Greek 5 is open to those who have completed Greek 4. A critical study of the authors read is supplemented with a general survey of Greek philosophy.

**6. Greek Composition; practice in sight reading. *One hour a week.*
PROFESSOR WADE.

Greek 6 may be taken by anyone who has had the equivalent of Greek

1. It is especially recommended to Freshmen intending to pursue the study of Greek beyond the Freshman year.

7. Greek Composition; reading at sight. *One hour a week.*
PROFESSOR WADE.

Greek 7 is open only to students who have completed Greek 6.

NOTE:—No student can be recommended as a teacher of Greek who has not taken at least one course in Greek composition.

[8. Elegiac and Lyric Poets. Lectures and reading. *Three hours a week.* (S) PROFESSOR WADE.]

Greek 8 is open to students who have completed Greek 2. Greek 8 will be given in 1906–1907.

9. Orators: Jebb, Selections from the Attic Orators; Lysias; Demosthenes. Reading and lectures. *Three hours a week.* (S)
PROFESSOR WADE.

Greek 9 is open to students who have completed Greek 2.

[10. Advanced subject, for the degree of Master of Arts. Work will be arranged on consultation with the instructor, to suit the needs of the student. PROFESSOR WADE.]

CLASSICAL ARCHAEOLOGY

Under this title are grouped subjects of the Greek and Latin departments which deal, to a large measure in lecture form, with the art, life (both public and private), and religion of the ancient Greeks and Romans. The work will consist of lectures, collateral reading and investigation, and papers. There will be illustration, wherever possible, with photographs, stereopticon, and specimens. The following subjects are intended to supplement the reading of classical authors, which naturally forms the basis of serious study in Classical Archaeology. It is intended to give two subjects each year, as follows:—

SUBJECTS

1. Greek, Roman, and Etruscan Architecture. *Three hours a week.* (F) PROFESSOR DENISON.

2. Greek and Roman Sculpture. *Three hours a week.* (S)
PROFESSOR WADE.

[3. Roman Private Life. *Three hours a week.* (F)
PROFESSOR DENISON.]

Classical Archaeology 3 will be given in 1905-1906.

[4. Greek Private Life. *Mon., Wed., Fri., 4.00.* (F) PROFESSOR WADE.]

In subjects 3 and 4 there will be systematic treatment of such topics as the customs pertaining to birth, education, marriage, death, the house, furniture, dress, meals, amusements.

[5. Roman Public Life. *Three hours a week.* (S) PROFESSOR DENISON.]

Classical Archaeology 4 and 5 will be given in 1906–1907.

[6. Greek Public Life. *Three hours a week.* (S) PROFESSOR WADE.]

Classical Archaeology 6 will be given in 1905-1906.

In subjects 5 and 6 there will be systematic study of such topics as the geography and topography of the ancient world, commerce and navigation, political, legal, and military institutions, measures and money, books, inscriptions, religion and festivals, chronology and calendar.

HEBREW

PROFESSOR WOODBRIDGE

Hebrew is offered as a foundation for the critical study of Old Testament literature, and of a more intimate understanding of Hebrew thought and life.

SUBJECTS

1. The Elements of Grammar; translation of portions of Genesis, of the Book of Ruth, and of other selections. *Tu., Th., Sat., 11.45.*

PROFESSOR WOODBRIDGE.

2. Syntax; critical reading from the Historical Books, from the Prophets, and from the Psalms. *Three hours a week.*

PROFESSOR WOODBRIDGE.

PHILOSOPHY*

PROFESSOR CUSHMAN, PROFESSOR SHIPMAN, PROFESSOR TOUSEY, AND PROFESSOR DOLBEAR

The department offers work in all the traditional branches of philosophy, adapted to the needs of many kinds of students. To the specialist in science it affords a comprehensive view of the sciences from the point of view of metaphysics. To the student seeking general culture it affords the liberalizing study of the history of philosophy. To the student of mathematics it commends logic as a necessary supplement to his work. To the specialist in philosophy it will give work as far as an undergraduate should go. The beginner has open to him the choice of

* The departments of Philosophy, History and Public Law, and Political Science constitute the group of Mental and Moral Science, in which twelve term hours of work are required for the degree of A.B. See page 54.

two subjects: logic, and the history of philosophy. If he chooses to begin with logic, the work in advanced logic and in ethics is open to him. In all cases where there is opportunity it is advised that the student begin with the history of philosophy, which is its primer. To follow this natural course makes of philosophy an inductive science. The other subjects may then follow at the student's option, or as his specific needs seem to demand. Students choosing philosophy as their major department will be expected to take at least three term hours each in the history of philosophy, logic, and psychology, and to make up three years of continuous work. The department is open to all except Freshmen and first-year Special students. The Philosophical Conference holds public meetings during the year. It gives the opportunity to the students of discussing philosophical subjects collateral with the regular work, and often invites eminent persons to address it on special topics.

INTRODUCTORY SUBJECTS

[1. History of Ancient Philosophy: the religious period of ancient thought, the pre-Socratic Greeks, the Greek Enlightenment, Plato and Aristotle; the Hellenic-Roman thought, including Stoicism, Epicureanism, neo-Platonism, and early Christianity. Lectures, and text-book: Windelband's History of Ancient Philosophy. *Tu., Th., Sat., 9.45.* (F)
PROFESSOR CUSHMAN.]

2. History of Modern Philosophy: the beginnings of modern thought in the middle ages, the Renaissance (1500-1688), the modern Enlightenment (1689-1781), German philosophy from Kant to Hegel (1781-1820), modern Evolution theories. Lectures and text-book. *Tu., Th., Sat., 9.45.* (F) PROFESSOR CUSHMAN.

Philosophy 1 and Philosophy 2 are given at the same hour in alternate years.

3. Logic, especially Deductive, with an elementary consideration of fallacies. *Tu., Th., Sat., 10.45.* (F) PROFESSOR SHIPMAN.

ADVANCED SUBJECTS

4. Logic (advanced), especially Inductive. *Tu., Th., Sat., 10.45.* (S)
PROFESSOR SHIPMAN.

Much attention is paid to practical exercises. Philosophy 4 is open to those students who have completed Philosophy 3 with distinction. In it fallacies are discussed at much greater length, and recent modifications of logical doctrine are examined.

**5. Psychology. Lectures and illustrative experiments. The phenomena of consciousness are studied with reference to the physiology of the nervous system, including the brain, eye, ear, skin, nose, and mouth. The elements of consciousness, social psychology. *Tu., Th., Sat., 9.45.* (S)
PROFESSOR CUSHMAN.

Philosophy 5 must be preceded by Philosophy 1, 2, or 3.

6. Ethics, Theory of. The moral nature; springs of conduct; moral judgments; theories of the moral standard, particularly sentimentalism, hedonism, rigorism, eudæmonism; moral volition, with critical examination of determinism; the moral ideal. Text-books, lectures, assigned reading, themes. *Mon., Wed., Fri., 10.45.* (F) PROFESSOR TOUSEY.

Philosophy 6 must be preceded by Philosophy 1, 2, or 3.

7. Ethics, Applied. Bearing of moral theory on the problems of (a) the individual life, (b) the social life. Special consideration of duties, rights, temperance, charities, moral pathology, penology. Text-books, lectures, prescribed reading, and theses. *Tu., Th., Sat., 10.45.* (S)
PROFESSOR TOUSEY.

Philosophy 7 must be preceded by Philosophy 6.

8. Ethics, Historical and Critical. History of ethical speculation; development of moral customs and ideals. Text-books, lectures, prescribed studies in the classics of ethical literature, and theses. *Mon., Wed., Fri., 10.45.* (S) PROFESSOR TOUSEY.

Philosophy 8 must be preceded by Philosophy 6.

9. Metaphysics: the Theory of Reality, including a review and criticism of the common theories of life, such as materialism, realism, theism, mysticism, idealism, and the fundamental problems involved. Lectures, theses, text-book. *Mon., Wed., Fri., 10.45.* PROFESSOR CUSHMAN.

The problems discussed are those fundamental to science, ethics, aesthetics, and logic, considered from the point of view of metaphysics. Among these are the questions of teleology, consciousness and self-consciousness, personality, immortality, freedom and necessity, causation, nature, evil, beauty.

10. Aesthetics: the theory of beauty, and the philosophy of art; historical review of aesthetic theories. Lectures and theses, collateral reading. *Mon., Wed., Fri., 9.45.* (F) PROFESSOR CUSHMAN.

11. English Philosophy from Hobbes to Hume. The historical development of the English school of thought until Hume, with a critical and expository reading of the works of Hobbes, Locke, Berkeley, and Hume, together with a survey of contemporaneous and other political theories, such as those of Spinoza, Hooker, Rousseau, and Grotius. *Mon., Wed., Fri., 9.45.* (S) PROFESSOR CUSHMAN.

[12. The Philosophy of Kant. A careful critical and expository reading of the Critiques of the Pure Reason, the Practical Reason, and the Judgment, in Watson's translation. The historical position of Kant with reference to his predecessors and to his influence upon modern thought. Lectures, prescribed reading. *Mon., Wed., Fri., 9.45.* (S) PROFESSOR CUSHMAN.]

Philosophy 12 will be given in 1905–1906.

[13. Descartes, Spinoza, and Leibnitz, their historical development and doctrines, with a critical and expository reading of their works. Lectures and prescribed reading. *Mon., Wed., Fri., 9.45* (S) PROFESSOR CUSHMAN.]

Philosophy 13 will be given in 1906-1907.

14. Spencer's First Principles. *Three hours, to be arranged.* (S)
PROFESSOR DOLBEAR.

15. The Philosophy of Theism. The Final Problem; Limits of the Intelligence; Theistic Arguments; Final Cause in Nature; Anti-Theistic Theories. *Mon., Wed., Fri., 11.45.* PROFESSOR TOUSEY.

[16. The Philosophy of Religion, historical, critical, and constructive. topical reports by the class, and lectures. *Tu., Th., Sat., 11. 45.*
PROFESSOR KNIGHT.]

PEDAGOGICS

SUBJECT

[1. The Theory and Practice of Teaching. The ethical and psychological principles involved in teaching, important modern theories, supplementary lectures on practical methods. *Tu., Th., Sat., 11.45.* (S)
PROFESSOR CUSHMAN ASSISTED BY TEACHERS FROM LEADING SECONDARY SCHOOLS.]

HISTORY AND PUBLIC LAW*

PROFESSOR EVANS AND PROFESSOR BOLLES

The department aims to develop the idea of unity in the history of mankind, and to make the study of all history of practical value through its relation to present-day problems and conditions. To this end the approach is made through subjects intended to give a thorough scientific knowledge of essential facts, and so arranged as to show these facts in their proper relations. History 1 and 2 are the introductory subjects by which the student is prepared for more detailed work. History 3 is devoted to the history of the United States. The subjects numbered from 4 to 9 offer to properly qualified students op-

* See note, page 54.

portunity to make a more detailed study of limited periods in the history of Europe and America. These subjects are arranged in two series, which alternate with each other from year to year, and thus cover a considerable range. Subjects 11 to 14 relate to church history and the comparative history of religions. History 15 is devoted to research.

Students expecting to make History their principal study are urged to devote considerable time in their first and second years to the study of modern languages. In History 5, 6, and 7 a reading knowledge of French will be assumed.

In the division of Public Law and Administration the object is to furnish such general knowledge of political institutions and their working as is needed by every intelligent citizen, and also to assist those who expect to enter the legal profession or the government service. The study of law and government is closely related to the study of history, and hence one year of history is required for admission to the work in Public Law. The work in this group begins with a study of the political institutions of the United States, which is followed by more advanced subjects dealing with the institutions of our own and other countries, as well as by subjects treating international relations, the history and principles of jurisprudence, and public administration. A knowledge of French is desirable, and in some cases indispensable. As far as possible the subjects should be taken in the order of their numbers.

History

SUBJECTS

1. The General History of Europe since the Fall of Rome. History 1 is an outline course, designed to give a comprehensive view of the various political, religious, industrial, and social factors of the history of Europe, and thus to pave the way for a more detailed study of limited periods. Text-books, lectures, assigned readings, and the preparation of themes.
Mon., Wed., Fri., 10.45. PROFESSOR EVANS AND MR. WOOD.

History 1 must precede all other subjects in History, excepting History 11, which may precede it, History 12, which may accompany it, and History 2, which it may either precede or accompany. History 1 and 2 will not be accepted for an advanced degree. Students desiring to take all the subjects in the department should elect History 1 and 2 in their second year.

2. The General History of England. Text-book, lectures, and themes. *Mon., Wed., Fri., 8.45.* PROFESSOR BOLLES.

3. American History. Colonial history (*first half-year*); the nineteenth century (*second half-year*). Lectures and themes. *Mon. Wed., Fri., 10.45.* PROFESSOR BOLLES.

[4. Constitutional History of England. A study of the growth of the Constitution of England, with particular reference to the Stuart period. *Mon., Wed., Fri., 3.00.* (F) PROFESSOR EVANS.]

[5. The History of the Continent during the Seventeenth and Eighteenth Centuries. A detailed study of the rise of Russia, the creation of Prussia, the rule of Richelieu and Mazarin, the age of Louis XIV, and the Ancient Regime. *Mon., Wed., Fri., 3.00* (S) PROFESSOR EVANS.]

History 4 and 5 will not be given in 1904–1905, but may be expected in 1905–1906.

6. The French Revolution and the Napoleonic Period. The history of Europe from 1789 to 1815. *Mon., Wed., Fri., 3.00.* (F) PROFESSOR EVANS.

7. The Nineteenth Century. One of the chief purposes of History 7 is to furnish some explanation of present-day questions in European politics. *Mon., Wed., Fri., 3.00.* (S) PROFESSOR EVANS.

History 6 and 7 will not be given in 1905–1906, but may be expected in 1906–1907.

[8. History of English Cities and Towns. A study of the chief municipalities of Great Britain, with particular reference to their connection with the history of the country. Lectures and illustrations. *Tu., Th., 3.00.* (F) PROFESSOR BOLLES.]

[9. English Social Life. Lectures and illustrations. *Tu., Th., 3.00.* (S) PROFESSOR BOLLES.]

11. History of the Hebrew people, from their settlement in Canaan until the rise of the Herodian Dynasty. A study of their political relations, their institutions, and their literature. *Mon., Wed., Fri., 4.00.* PROFESSOR HARMON.

12. History of the Beginnings of Christianity. A study of the time of Jesus, of the rise and growth of the apostolic church, and of its literature. *Mon., Wed., Fri., 3.00.* (F) PROFESSOR HARMON.

[13. The Non-Christian Religions. Comparative studies of religion and civilization in ancient Egypt, Chaldea, Greece, Rome, and Germany, and in ancient and modern India, China, Japan, and Turkey. *Tu., Th., Sat., 8.45.* (F) PROFESSOR KNIGHT.]

14. History of the Church, including the Sects, from the Apostles to the present time. History of Doubt. *Tu., Th., Sat., 9.45.*
PROFESSOR WOODBRIDGE AND PROFESSOR KNIGHT.

During 1904–1905, History 14 will be given by Professor Woodbridge.

15. Seminary in History and Public Law. Investigation of selected topics from the sources. During the year 1904-1905 the subject of study will be the constitutional history of the Civil War. History 15 is open only to such students, making History their major subject, as receive the special permission of the instructor. *Hours and credit to be arranged with the instructor.* PROFESSOR EVANS.

Public Law and Administration

SUBJECTS

1. Political Institutions of the United States—Federal, State, and Municipal. A study is made of government from the standpoint both of constitutional arrangements and of its actual working as modified by usage and existing conditions. Text-book: Bryce, The American Commonwealth, accompanied by lectures, assigned readings, and the preparation of a thesis. *Mon., Wed., Fri., 11.45.* (F) PROFESSOR EVANS.

Public Law 1 must be preceded by History 1, and must precede all other courses in this group, except Public Law 3. Students desiring to take all the subjects in Public Law should elect History 1 (also History 2 if possible) in their second year, and Public Law 1, 2 or its alternate, and 3 in their third year.

2. Constitutional Law. A study of the Constitution of the United States, as interpreted in the chief decisions of the Supreme Court. *Mon., Wed., Fri., 11.45.* (S) PROFESSOR EVANS.]

Public Law 2 will be given in 1904-1905, and in alternate years thereafter. In the years when it is not given, one of the subjects numbered 4 to 7 will be given.

3. Ancient Law. Roman Law. Lectures, text-book, and discussions. *Tu., Th., Sat., 9.45.* (F) PRESIDENT CAPEN.

Public Law 3 must be preceded by History 1.

[4. European Government and Politics. A study of the constitutions of the chief European states, together with a consideration of some of the most important questions of European politics. A reading knowledge of French is desirable. Text-book, lectures, assigned reading, and the preparation of a thesis. *Mon., Wed., Fri., 8.45.* (F) PROFESSOR EVANS.]

[5. International Law and the History of Diplomacy: the history of international law, a consideration of its leading principles, and some account of the most important treaties and diplomatic controversies.

Text-book, lectures, assigned readings, and the preparation of a thesis. *Mon., Wed., Fri., 8.45.* (S) PROFESSOR EVANS.]

[6. Principles of Public Administration, with particular reference to municipal corporations. *Mon., Wed., Fri., 8.45.* (F) PROFESSOR EVANS.]

[7. Elements of Jurisprudence. A study of the leading juristic principles, based on the Institutes of Justinian and Blackstone's Commentaries, designed to fit students for a more intelligent study of the law from a professional standpoint. *Mon., Wed., Fri., 8.45.* (S) PROFESSOR EVANS.]

POLITICAL SCIENCE*

PRESIDENT CAPEN AND PROFESSOR METCALF

In its course of instruction, the chief aim of the department of Political Science is to give a general view of the most important branches of political economy, beginning with the elements of the science and passing by degrees to work of the investigative order. The topics and the methods of investigation are also designed with reference to the constantly increasing needs of those who are fitting themselves for various practical careers, such as banking, transportation, or commerce; and to those who look forward to the legal profession, to the public service, to journalism, or to work in connection with social problems.

To these ends instruction is offered at present in eight different subjects. Economics 1 is designed to lay the foundation for the advanced work, but endeavors at the same time to satisfy the wants of those who seek simply a general knowledge of economics. Economics 1, or its equivalent, must precede all other study in the department. Students who desire to specialize in economics may enter upon the work in the first year of their college course, if qualified to do so. For the advanced subjects a knowledge of general, constitutional, and political history is useful. The character of the work in the advanced classes is briefly outlined in connection with the following statement of subjects.

SUBJECTS

1. Elements of Economics. Exposition of the fundamental principles of the production, exchange, and consumption of wealth. Lectures on

* See note, page 54.

trade unions, co-operation, socialism, banking, and finance. Seager's Introduction to Economics is used as a guide. *Tu., Th., Sat., 10.45.*
PROFESSOR METCALF.

2. Modern Economic History, with special reference to the economic history of the United States. Leading topics are the transition from regulated to competitive system of industry; the industrial revolution; the financial, commercial, and industrial history of the British-American colonies and the Confederation. In the study of the United States during the nineteenth century the problems of free and slave labor, transportation, industrial organization, tariff, and finance will receive special attention. *Mon., Wed., Fri., 9.45.* PROFESSOR METCALF.

3. Practical Sociology. The nature and methods of social science. This subject is conducted with special reference to American conditions, and comprises a study of the laws of population, the institution of the family, the development of great cities, immigration, pauperism, charities, labor organizations, and the liquor question. Lectures, reports, book reviews, and visits to charitable and correctional institutions in Boston and vicinity. *Mon., Wed., Fri., 8.45.* (S) PROFESSOR METCALF.

4. Principles of Public Finance. Public Expenditures; classification of public revenues; recent reforms in taxation; the development and significance of public debts; financial administration; recent European and American works on finance. The Elements of Public Finance, by Daniels, is used as a guide. Lectures and discussions. *Tu., Th., Sat., 8.45.* (F) PROFESSOR METCALF.

5. Money, Credit, and Banking: an historical course, with special reference to the financial experience of the United States. Leading topics are Hamilton's financial system; protection and revenue tariffs; the bank question; the fiscal policy of the Civil War; resumption of specie payments; the national banking system; state and local taxation; silver legislation and the panic of 1893; government loans; present currency problems. Lectures, discussions, assigned reading, and theses. Dewey's Financial History of the United States is used as a guide. *Tu., Th., Sat., 8.45.* (S) PROFESSOR METCALF.

6. Selected topics in Economics. Topics for 1904–1905 are:— *First half-year*: (*a*) Modern Industrial Combinations,— a study of the causes producing trusts, the function of the industrial promoter, capitalization of trusts, influence of industrial monopoly upon prices, profits, and wages, the practical results of regulation through publicity, taxation, and state ownership. *Second half-year*: (*b*) The Modern Organization of Labor,— an account of the growth, methods, and aims of modern associations of wage earners; a study of their relations to the factory system, labor disputes, labor legislation, workingmen's insurance, and state socialism; and (*c*) The Theory and History of Commercial Crises in England, France, Germany, and the United States during the nineteenth century.

The Report of the United States Industrial Commission will form the basis for topics (*a*) and (*b*). Each member of the class will be required to trace the history and workings of some prominent combination of capital or labor. Either half-year may count as a half-subject. *Tu., Th., Sat., 9.45.*
PROFESSOR METCALF.

7. The History of Economics: an account of the beginnings, the progress, and the various schools of economic science; study of the writings of Adam Smith, Ricardo, Mill, and others. Economics 7 is open to advanced students who are specializing in Economics. A reading knowledge of French and German is desirable. *Mon., Wed., Fri., 4.00.* (S)
PROFESSOR METCALF.

8. Seminary in Economics and Sociology, designed for advanced students who are specializing in the department. Questions in economics, statistics, or sociology may be selected. *Hours and credit to be arranged with the instructors.* PRESIDENT CAPEN AND PROFESSOR METCALF.

MATHEMATICS

PROFESSOR WREN AND ASSISTANT PROFESSOR RANSOM

The aim of the instruction in mathematics is to cultivate power of exact thinking, as well as skill in symbolic methods of drawing necessary conclusions. The class-room work is a combination of lectures with questioning of the students to ascertain that the points presented have been duly comprehended.

Mathematics 1, with 2 or 3, constitutes the required work in mathematics. The two required subjects should be taken in the Freshman year. Students who intend to pursue further work in the department should take 3 in preference to 2, and should take 4, 5, and 6 in the Sophomore and Junior years. Other subjects may be taken when the student is prepared for each. Subjects 9, 10, 11, 13, and 14 require a knowledge of the calculus. Juniors and Seniors who have mastered the calculus may elect any of the remaining subjects.

Certain other subjects are of great value in supplementing and illustrating mathematical studies. Attention is called especially to Drawing 1, and to Civil Engineering 1 and 6.

SUBJECTS

1. College Algebra. *Tu., Th., Sat.: Division (a), 8.45; Division (b), 9.45.* (F)
ASSISTANT PROFESSOR RANSOM.

2. Solid Geometry. *Tu., Th., Sat., 9.45.* (S)
ASSISTANT PROFESSOR RANSOM.

3. Trigonometry. *Tu., Th., Sat., 8.45.* (S)
ASSISTANT PROFESSOR RANSOM.

4. Analytical Geometry. *Mon., Wed., Fri., 11.45.* (F)
ASSISTANT PROFESSOR RANSOM.

5. Elements of the Calculus. *Mon., Wed., Fri., 11.45.* (S)
ASSISTANT PROFESSOR RANSOM.

6. Differential and Integral Calculus. *Mon., Wed., Fri., 9.45.* (F)
ASSISTANT PROFESSOR RANSOM.

7. Differential and Integral Calculus (advanced). *Mon., Wed., Fri., 9.45.* (S)
PROFESSOR WREN.

9. Theory of Equations and Determinants. *Three hours for the first half-year.*
ASSISTANT PROFESSOR RANSOM.

10. Differential Equations. *Three hours for the second half-year.*
ASSISTANT PROFESSOR RANSOM.

11. Method of Least Squares. *Two hours for the second half-year.*
PROFESSOR WREN.

[12. Quaternions. *Three hours for the first half-year.*
PROFESSOR WREN.]

Mathematics 12 is open to students who have completed Mathematics 1, 2, 3, and 4.

[13. The Theory of the Potential Function. *Three hours for the second half-year.*
PROFESSOR WREN.]

14. Theoretical Mechanics. *Mon., Wed., Fri., 10.45.*
ASSISTANT PROFESSOR RANSOM.

PHYSICS

PROFESSOR DOLBEAR AND ASSISTANT PROFESSOR CHASE

The work in physics begins with a consideration of general physics, this being the subject to be taken by those electing physics for their prescribed work in science, and the introductory subject for major students in the departmcnt. A text-book is used, critical comments and much additional material are supplied, and frequent lectures are given, with experiments. The aim is to present the science of physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible. Hence in each branch there are frequent returns to these first principles.

An elective course is offered: Spencer's First Principles is read and thoroughly discussed. (See Philosophy 14.)

In the physical laboratory students are given Ames and Bliss's Laboratory Manual, and a syllabus of the course, for guides. These are supplemented by Glazebrook's Physical Optics, Pickering's Manipulations, Kaulrausch's Measurements, Stewart and Gee's Practical Physics, vol. 1, Glazebrook and Shaw's Practical Physics, Nichols's Laboratory Manual, vols. 1 and 2. In addition to the experimental and note-book work, many problems are solved.

Physics 2 and Physics 4 comprise elementary work in Electricity and Magnetism, Physics 4 being a mathematical treatment based upon Nichols and Franklin's Theory of Physics, vol. 2.

In the laboratory subject in electricity much attention is given to Wheatstone's bridge and the measurement of resistance. Careful study is made of the condenser and the magnetic properties of iron. The candle-power of incandescent lamps, the determination of the constants of recording wattmeters, and the calibration of ammeters and voltmeters receive due attention. Students who are preparing themselves to become teachers of physics have an opportunity to perform most of the experiments needed for illustrating elementary work.

SUBJECTS

1. General Physics. Lectures and experiments. Physics 1 is to be taken by students choosing physics for their prescribed science subject, and is introductory to other subjects in physics. *Mon., Wed., Fri., 10.45.*
PROFESSOR DOLBEAR.

[2. Electricity. Thompson's Elementary Lessons in Electricity and Magnetism. Lectures and recitations. *Mon., Wed., Fri., 11.45.* (S)
ASSISTANT PROFESSOR H. G. CHASE.]

3. Physical Laboratory. Mechanics, Sound, Heat, and Light. *Lecture, Wed., 8.45. Laboratory, Tu., Th., 2.00 to 5.00; or Mon., Wed., 9.45 to 12.45.* (S) *Counting as three term hours.*
ASSISTANT PROFESSOR H. G. CHASE, MR. ROLLINS, AND MR. MUNRO.

4. Electricity: Elementary Mathematical Treatment. *Mon., Wed., Fri., 11.45.* (F)
ASSISTANT PROFESSOR H. G. CHASE.

5. Electrical Laboratory: Measurements and Tests. *Counting as four term hours. Mon., or Fri., 2.00 to 6.00, and Wed., 2 to 5.*

ASSISTANT PROFESSOR H. G. CHASE, MR. ROLLINS, AND MR. MUNRO.

Physics 5 must be preceded by Physics 4.

7. Physics 7 has been transferred to the department of Philosophy, as Philosophy 14.

[8. Telephone and Telegraph. *One hour, to be arranged.* (S)

PROFESSOR DOLBEAR.]

[9. Heat. Lectures and recitations, based on Preston's Theory of Heat. Mathematics 6 is a prerequisite of Physics 9. *Counting as three term hours.* (F) *Hours to be arranged.*

ASSISTANT PROFESSOR H. G. CHASE.]

CHEMISTRY

PROFESSOR MICHAEL AND PROFESSOR DURKEE

The work in the department begins with Chemistry 1, which is open for election by the students of the courses in Liberal Arts, and is required of engineering students in their second year. The instruction is by means of lectures, recitations, and laboratory work. The lectures, illustrated with numerous experiments, are intended to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including a brief account of the chemistry of the carbon compounds and the principal technical processes. One-half of the time devoted to this subject is given to practical work in the laboratory, and the student has an opportunity to verify some of the chemical theories, and to become familiar with substances and their chemical behavior. The lectures are supplemented with recitations and written examinations. An opportunity to continue the study of theoretical and inorganic chemistry is afforded by subjects 11 and 12. Those who wish may supplement the above course of lectures with laboratory practice by taking subject 14, in which some of the more difficult inorganic experiments are performed and less common preparations made.

The instruction in qualitative analysis extends through a year, and consists of two subjects (2 and 3), taught in part by lectures and recitations, but mainly by work in the laboratory. During the advanced course the student is required to analyze

correctly a large number of mixtures and minerals. Quantitative Analysis is mainly taught by laboratory practice, in order that the student may attain that skill in manipulation which is necessary for this kind of work. In subject 4 the student is required to analyze the simpler salts, alloys, and minerals, and in the advanced subject 5 the more complicated minerals, ores, and commercial and food products. The analysis of organic substances is included in subject 5. Technical gas analysis (subject 9) is taught by lectures and laboratory work. Assaying (subject 7) is adapted to familiarizing the student with the practical methods of sampling and assaying gold, silver, and lead ores. The above subjects cover a comprehensive study of analytic chemistry, and are intended to give the student such thorough theoretical and practical knowledge as to prepare him for analytical work of any description. Metallurgy (subject 8) is intended to give the student some of the more important methods of extracting gold and silver from ores. It should be taken after or in connection with Fire Assay (Subject 7).

The study of organic chemistry begins with a course of experimental lectures, together with recitations, which are designed to cover the general principles and methods, and include description of the most important organic compounds. For those who wish to continue the study of this science an opportunity is given by subject 13, in which by lectures the underlying theories of organic chemistry are more fully discussed, and the relations between them and organic reactions are explained. The laboratory practice in organic chemistry (subject 15) may be begun at the same time as subject 10, and continued with 13. It includes the methods for determining the physical properties and molecular weights of organic substances, and the preparation of compounds. When taken in connection with subject 13, one or more researches of special importance will be repeated by the student. The subjects 12, 13, 14, 15, and 16 may be taken as graduate work.

Subjects 12, 13, 14, and 15, are especially designed to lead

up to research work in chemistry, and students who have taken them, with subject 5, are prepared to enter on this line of advanced work. Ample facilities are offered for the successful prosecution of investigations in inorganic and organic chemistry.

Two laboratory hours are equivalent to one term hour, except in the special Course in Chemistry for the degree of Bachelor of Science, in which three hours of work in the laboratory count as one term hour. The quantitative and organic laboratories are open from nine to five o'clock daily, Saturday afternoons excepted. In Chemistry 2, 3, 4, and 5, the laboratory hours on Saturday are for students in the Course in Chemistry.

SUBJECTS

1. General Chemistry. Lectures, recitations, and laboratory work. *Lecture, Wed., Fri., 2.00; three hours of laboratory work, as assigned by the instructor. Counting as six term hours.*

PROFESSOR DURKEE, MR. MURPHY, AND MR. SMITH.

2. Qualitative Analysis. Basic Analysis. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00; Sat., 8.45 to 11.45.* (F) *Counting as three term hours.*

PROFESSOR DURKEE.

3. Qualitative Analysis. Acids, Analysis of Salts, Commercial and Natural Products. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00. Sat., 8.45 to 11.45.* (S) *Counting as three term hours.*

PROFESSOR DURKEE.

4. Quantitative Analysis. Gravimetric and Volumetric Analysis; Analysis of Minerals. Lectures and laboratory work. *Mon., Fri., 2.00 to 5.00; Sat., 8.45 to 11.45. Counting as six term hours.*

PROFESSOR DURKEE.

5. Quantitative Analysis (advanced course). Analysis of Minerals, Ores, Water, Food Products, Organic Analysis. Laboratory work. *Mon., Fri., 2.00 to 5.00; Sat., 8.45 to 11.45. Counting as six term hours.*

PROFESSOR DURKEE.

[6. Mineralogy 1 is equivalent to Chemisty 6.]

7. Fire Assay. Open to students who have taken 1, 2, 3, and 4. *Tu., Th., 2.00 to 5.00.* (S) *Counting as two term hours.*

PROFESSOR DURKEE.

8. Metallurgy. Lectures, recitations, and laboratory work. Chemistry 8 is open to students who have taken Chemistry 1. *Wed., Fri., 10.45.* (S)

PROFESSOR DURKEE.

Chemistry 8 should be taken after or together with Chemistry 7.

9. Gas Analysis. Lectures and laboratory work. Chemistry 9 is open to students who have taken Chemistry 1, 2, 3, and 4. *Mon., 2.00 to 5.00. Counting as one term hour.* (F) PROFESSOR DURKEE.

10. Organic Chemistry. Lectures and recitations. Chemistry 10 is open to students who have taken Chemistry 1. *Mon., Wed., Fri., 9.45.* (F) *Counting as three term hours.* MR. MURPHY.

11. Theoretical Chemistry. Lectures and recitations. Chemistry 11 is open to students who have taken Chemistry 1. *Mon., Wed., 11.45.* (S) *Counting as two term hours.* MR. MURPHY.

12. Theoretical and Inorganic Chemistry (advanced course). Lectures and recitations. Chemistry 12 is open to students who have taken Chemistry 1 and 11. *Hours to be arranged.* (F) *Counting as three term hours.* PROFESSOR MICHAEL.

13. Organic Chemistry (advanced course). Lectures and recitations. Chemistry 13 is open to students who have taken Chemistry 1 and 10. (S) *and* (F) *Counting as six term hours.* PROFESSOR MICHAEL.

14. Laboratory work in Inorganic Preparations. *Hours to be arranged by the instructors. Counting as two term hours.* PROFESSOR MICHAEL.

15. Laboratory work in Organic Analysis: determination of physical constants and molecular weights; preparation of organic compounds. *Hours to be arranged by the instructors. Counting as three term hours.* PROFESSOR MICHAEL AND MR. MURPHY.

16. Original Investigations in Chemistry. *Hours to be arranged by the instructor.* PROFESSOR MICHAEL.

17. Discussion of Chemical Subjects and Recent Investigations. *One hour a week.* PROFESSOR MICHAEL.

18. Medical Chemistry. Lectures, quizzes, and laboratory work. (F) *Counting as thirteen term hours.* PROFESSOR AUSTIN AND DR. THORP.

Chemistry 18 must be preceded by Chemistry 1, 2, and 3. It is given at the Tufts Medical School, 416–430 Huntington Avenue, Boston.

BIOLOGY

PROFESSOR KINGSLEY AND ASSISTANT PROFESSOR LAMBERT

Instruction in Biology is given both by lectures and by laboratory work, the object being to impart the scientific method of work and thought rather than to cram the student with a large number of unimportant facts. In the laboratory work four hours a week is the minimum, but mere time service is not sufficient.

Three of the subjects in this department (4M, 5M, and 9) are given at the Medical School, 416-430 Huntington Avenue, Boston. These subjects may be taken by candidates for the bachelor's degree, and in this way students contemplating the study of medicine may anticipate one year of their professional course. Those who wish these subjects to count for the bachelor's degree must have previously taken at least Biology 1 and 3.

There are three well-lighted laboratories, furnished with every requisite for good work, including microscopes, microtomes, reagents, and abundant material for illustration and dissection. There is also a department library containing more than 2,000 volumes and over 5,100 pamphlets and parts of volumes, while the college library contains the proceedings of many learned societies, both American and foreign. Besides these, proximity to Boston and Cambridge gives easy access to library facilities unequalled in any other part of America. There is required from all students taking laboratory courses a laboratory fee of two dollars a term for each course, payable in advance.

SUBJECTS

1. General Biology. Lectures and laboratory work. *Tu., Th.: lecture, 11.45; laboratory, 2.00 to 4.00. Counting as six term hours.*

PROFESSOR KINGSLEY AND ASSISTANT PROFESSOR LAMBERT.

Biology 1 is required of all who elect work in this department, and is a prerequisite for the other biological subjects.

[2. Morphology of Invertebrates. Lectures and laboratory work. *Mon., Fri.: lecture, 4.00; laboratory, 2.00 to 4.00. Counting as six term hours.* PROFESSOR KINGSLEY.]

3. Morphology of Vertebrates. Continuation of Biology 2. *Mon., Fri.: lecture, 4.00; laboratory, 2.00 to 4.00. Counting as six term hours.*

PROFESSOR KINGSLEY.

Biology 2 and Biology 3 are given in alternate years.

4. Elementary Physiology. Lectures, laboratory work, and recitations. *Lecture, Tu., Th., Sat., 11.45; laboratory, Tu., Th., 2.00 to 4.00.* (S) *Counting as three term hours.* PROFESSOR KINGSLEY.

Biology 4 must be preceded by or accompany Chemistry 1. Students in the Medical Preparatory course take this subject at the Medical School.

4M. Human and Comparative Physiology. Lectures, recitations, conferences, and laboratory work. *Counting as thirteen term hours.* (S)

PROFESSOR DEARBORN.

Biology 4M is given at the Tufts Medical School, Boston.

5. Normal Histology: a study of the tissues of vertebrates, including microscopical technique. *Lecture, Mon., 11.45; laboratory, Mon., Fri., 2.00 to 4.00.* (F) *Counting as three term hours.* PROFESSOR KINGSLEY.

5M. Histology, Medical. Lectures, quizzes, and laboratory work. *Counting as five term hours.* (F)

PROFESSOR BATES AND DR. WINSLOW.

Biology 5M is given at the Tufts Medical School, Boston.

6. Systematic Zoology. Laboratory work in the identification and classification of specimens. *Counting as three term hours.*

PROFESSOR KINGSLEY.

Biology 6 requires ability to read French and German.

7. Botany. Lectures and laboratory work. *Wed., Fri.: lecture, 11.45; laboratory, 9.45 to 11.45, or 2.00 to 4.00. Counting as six term hours.*

ASSISTANT PROFESSOR LAMBERT.

8. Special Work. At least six hours weekly of laboratory work in the investigation of some problem. PROFESSOR KINGSLEY.

Subjects 5 to 8 are intended for both graduates and undergraduates.

9. Human Anatomy. Lectures, quizzes, and dissection. *Counting as thirteen terms hours.* (F) PROFESSOR C. P. THAYER.

Biology 9 is given at the Tufts Medical School, Boston.

GEOLOGY

MR. RICHARDS AND PROFESSOR KINGSLEY

The subjects offered in the department of Geology have a twofold object: to give an outline of the structure and history of the earth; and to give a training in the methods of observational science. The first subject (Geology 1) is introductory, open to all, and intended primarily for those who have had no previous work in science. The other subjects are such that certain preliminary studies, stated in connection with each, must be taken before entering upon them.

The illustrative collections in these lines are ample. Besides the exhibition specimens in the Barnum Museum, there is a large working collection illustrating mineralogy, lithology, and dynamical and historical geology. These are supplemented with maps, diagrams, photographs, and lantern slides. The work in each subject consists of lectures and recitations,

together with work in the laboratory and in the field. Excursions are taken to neighboring points that illustrate certain phenomena. A laboratory fee of two dollars is required of all students taking laboratory courses.

SUBJECTS

1. Physiography. Lectures and recitations, laboratory and field work. Lectures, *Tu., Th., 10.45;* laboratory, *Wed., 3.00;* field work, *occasional Sat. afternoons.* (S) *Counting as three term hours.* MR. RICHARDS.

2. General Geology. Lectures, two hours a week; laboratory or field work, four hours a week; open to students who have taken Physics 1 and Chemistry 1. *Mon., Wed., Fri., 10.45 to 12.45. Counting as six term hours.* MR. RICHARDS.

3. Paleontology. Recitations and laboratory work, six hours a week; open to students who have taken Geology 2 and Biology 1. *Counting as three term hours.* (F) or (S) PROFESSOR KINGSLEY AND MR. RICHARDS.

4. Field Geology. Conference, one hour; field work, six hours a week; open to students who have taken Geology 2. *First part of first and last part of second half-year. Counting as three term hours.* MR. RICHARDS.

MINERALOGY

1. Determinative Mineralogy. Lectures, two hours; laboratory, four hours a week; open to students who have taken Chemistry 1. *Tu., Th., Sat., 10.45 to 12.45.* (F) *Counting as three term hours.* MR. RICHARDS.

2. Crystallography and Descriptive Mineralogy. Lectures, two hours a week; laboratory work, four hours a week; open to students who have taken Mineralogy 1. *Tu., Th., Sat., 10.45 to 12.45.* (S) *Counting as three term hours.* MR. RICHARDS.

DRAWING AND SHOPWORK

PROFESSOR ANTHONY

Drawing

The object of the studies pursued in the department of Drawing is three-fold: first, a development of the theory of technical drawing; second, the acquirement of precision and rapidity in the execution of the work; third, a practical application of these principles in the fluent expression of mechanical ideas by means of graphic language. Practice in the attainment of the first is acquired by freehand and geometric drawing and the

study of descriptive geometry. By means of progressive problems, in which nothing in the nature of a copy is permitted, the student is advanced to the consideration of point, line, and surface, from a purely analytic standpoint. The instruction in descriptive geometry is given by means of lectures and recitations, accompanied by frequent examinations in the freehand and instrumental construction of the problems. Rapidity of work being attainable only through precision, drawings are required to be executed with the greatest possible care and neatness. The theory and execution of a drawing having been mastered, together with the elements of kinematics, the student is directed to make such application of these principles to the illustration of mechanism as shall enable him to express his ideas graphically, in the most simple and direct manner. The machine drawings are made by such system as would be required in any well-conducted drafting-room, and the most modern methods are employed in the execution of the work as to the forms of graphic expression that may be used. A progressive course in design is pursued preparatory to and in connection with thesis work.

In the statement below, each "hour" is the equivalent of one term hour of credit.

SUBJECTS

[For hours, see the Engineering program.]

1. Descriptive Geometry. Lectures, recitations, and drawing. *Three hours a week* (*second half-year*).
PROFESSOR ANTHONY AND MR. ASHLEY.

2. Technical Sketching. *One hour*† *a week* (*second half-year*).
PROFESSOR ANTHONY.

3. Mechanical Drawing. *Two hours** *a week for the year.*
MR. ASHLEY.

4. Mechanics. *Three hours a week* (*first half-year*).
PROFESSOR ANTHONY.

5. Machine Drawing (elementary). *Two hours*† *a week* (*second half-year*).
ASSISTANT PROFESSOR C. H. CHASE.

* Each hour represents a three-hour period.

† Each hour represents a two-hour period.

6. Machine Drawing (advanced). *Two hours* a week (first half-year).* ASSISTANT PROFESSOR C. H. CHASE.

7. Elements of Design. *One hour* a week (second half-year).* PROFESSOR ANTHONY.

8. Machine Design (advanced). *Two hours* a week (first half-year).* PROFESSOR ANTHONY.

SHOPWORK

Work in the shops is designed to give practical knowledge of mechanical processes and of materials of construction. Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer. The course of work in the shops maintains a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shops from drawings prepared in the drafting-room.

SUBJECTS

[For hours, see the Engineering program.]

1. Carpentry, Turning, and Moulding. *Two hours* a week (first half-year).* MR. STEWART.

2. Pattern-making. *One hour* a week (second half-year).* MR. STEWART.

3. Forging. *One hour* a week (second half-year).* MR. STEWART.

4. Vise and Machine Tools. *Two hours* a week (second half-year).* ASSISTANT PROFESSOR C. H. CHASE.

5. Project Work. *Three hours* a week (second half-year).* ASSISTANT PROFESSOR C. H. CHASE.

CIVIL AND MECHANICAL ENGINEERING

PROFESSOR BRAY AND PROFESSOR SANBORN

Students who desire to elect engineering courses as collateral to their studies in liberal arts, or with a view of pursuing study in engineering after graduation, will find open to them the subjects outlined below. For all the subjects algebra, geometry, and trigonometry are an indispensable preparation. Fuller details,

* Each hour represents a three-hour period.

[illegible] the program hours are given in this catalogue under the Department of Engineering.

SUBJECTS

1. Surveying. General field practice, computations and plotting. *Two hours* a week (first half-year); two hours* a week (second half-year).*
PROFESSOR SANBORN, ASSISTANT PROFESSOR ROCKWELL, AND MR. TUCKER.

2. Precise Surveying, Engineering Jurisprudence, Fire Protective Engineering, Hydrographic Surveying. *Two hours* a week.*
PROFESSOR SANBORN.

3. Railroad Surveying. Field practice and office work, drawing and calculating. *Two hours* a week (first half-year).* PROFESSOR BRAY.

4. Railroad Engineering (to be taken with Engineering 3). *Three hours a week.* PROFESSOR BRAY.

5. Hydraulics. *Three hours a week (second half-year).*
PROFESSOR SANBORN.

6. Pure Mechanics. *Three hours a week (first half-year).*
PROFESSOR SANBORN.

7. Applied Mechanics. *Three hours a week (second half-year).*
PROFESSOR BRAY.

8. Experimental Mechanics (laboratory). *One hour* a week (first half-year).* PROFESSOR SANBORN AND ASSISTANT PROFESSOR ROCKWELL.
One hour a week (second half-year).*
PROFS. BRAY AND SANBORN, AND ASSISTANT PROFESSOR ROCKWELL.

9. Steam Engine. Theory and practice in the management of engines and boilers, valve-setting, tests. *Three hours a week (first half-year).*
ASSISTANT PROFESSOR C. H. CHASE.

10. Steam Engineering. Thermodynamics and valve gears. *Three hours a week (second half-year).* PROFESSOR BRAY.

11. Highways. *Two hours a week (first half-year).* PROFESSOR BRAY.

[12. Masonry Construction. *Three hours a week (second half-year).*
PROFESSOR BRAY.]

13. Sanitary Engineering. *Three hours a week (second half-year).*
PROFESSOR SANBORN.

14. Roofs and Bridges. *Three hours a week (first half-year).*
ASSISTANT PROFESSOR ROCKWELL.

15. Structural Design.* *Two hours a week.*
ASSISTANT PROFESSOR ROCKWELL.

---

* See foot-note, page 34.

ELECTRICAL ENGINEERING

PROFESSOR HOOPER

To the student in the College of Letters who may desire to elect advanced work in electricity, the following subjects are offered. All require a good working knowledge of algebra, geometry, and trigonometry, while subjects 4 and 5 require a like acquaintance with calculus and differential equations.

All subjects in this department must also be preceded by Physics 4, or its equivalent.

SUBJECTS

[For hours, see the Engineering program.]

1. Dynamo-Electric Machinery. Recitations and lectures. *Three hours a week* (*second half-year*). PROFESSOR HOOPER.

2. Electrical Problems. *Two hours a week* (*second half-year*). MR. ROLLINS.

3. Electrical Laboratory (advanced course). *Three hours a week for the year.* PROFESSOR HOOPER, MR. ROLLINS, AND MR. MUNRO.

4. Electricity: Alternating Currents. *Three hours a week for the year.* PROFESSOR HOOPER.

5. Electricity: Mathematical Treatment of Alternating Current Phenomena. *Three hours a week* (*first half-year*). PROFESSOR HOOPER.

6. Magnetism in Iron, Nickel, and Cobalt. *Three hours a week* (*second half-year*). PROFESSOR HOOPER.

7. Electrical Topics. Lectures by students. *Three hours a week* (*second half-year*). PROFESSOR HOOPER.

8. Dynamo Design. Calculations and Drawings. *Three hours a week* (*first half-year*). PROFESSOR HOOPER.

[9. Telegraph Engineering. *Three hours a week (first half year).* MR. ROLLINS.]

MUSIC

PROFESSOR LEWIS

The department of Music offers opportunities to gain a knowledge of musical history and of the principles of composition, as a basis for practical work in music or in musical criticism. The subjects, Elements of Theory, Harmony, and General History of Music may well be taken by students who wish to

* Each hour represents a three-hour period.

cultivate their appreciation of music, but have no intention of preparing themselves for professional work in the art.

SUBJECTS

[1. Elements of Theory. Lectures, practice, and analysis, with various text-books for reference. *Tu., Th., 4.00.* (S) PROFESSOR LEWIS.]

Only acquaintance with musical notation and with the piano keyboard is required. Music 1 is introductory to Music 2. Music 1 will be given in 1905-1906.

2. Harmony. Lectures and practical work, based on Chadwick's Manual of Harmony; collateral reading on biography and on theory. *Tu., 3.00 to 4.00; Th., 3.00 to 5.00.* PROFESSOR LEWIS.

[3. Sight-reading in Song, and Harmonic Analysis. *Tu., Th., 4.00.* (F) PROFESSOR LEWIS.]

Only those who have finished Music 2 may take Music 3. The harmonic analysis begun in Music 2 will be continued, with special attention to the more difficult problems of modern music. Harmonic Analysis, by B. Cutter, and Melodia, by Cole and Lewis, will be used as text-books.

Music 3 will be transferred to Tuesday and Thursday at 2.00, provided program appointments permit.

[4. Counterpoint, Single and Double. Lectures and practical work, based on the manuals of Goetschius, Jadassohn, and others; collateral reading on biography and theory. *Tu., Th., Sat., 11.45.* PROFESSOR LEWIS.

A thorough theoretical knowledge of harmony, and facility in the harmonization of basses and choral melodies, are required of those who take Music 4. A full equivalent of Music 2 must have been done by students who wish to begin their college work with Music 4.

[5. Fugue, Canon, Musical Form, and the Elements of Orchestration. Lectures and practical work, with various manuals for class use and reference. *Tu., Th., Sat., 11.45.* PROFESSOR LEWIS.]

Students who elect Music 5 must have attained grade A or B in Music 4, and must have given evidence of talent in melodic invention. Those who are admitted to the class are required to attend regularly during the year the public rehearsals or concerts of the Boston Symphony Orchestra, and at least eight concerts of chamber-music, as prescribed by the instructor.

[6. General History of Music, from the earliest times to the present day, with especial attention to the period since the death of Palestrina. Lectures, with various treatises for reference. *Mon., Wed., Fri., 11.45.* (S) PROFESSOR LEWIS.]

Music 6 may be a two-hour subject during 1905-1906, but the class occasionally may meet at the third of the assigned program hours.

[7. Special studies in Musical History, in Musical Criticism, or in the development of Musical Form. *Three hours a week.* PROFESSOR LEWIS.]

An equivalent of the work of Music 4, and an ability to read German and French with facility, are required of students who elect Music 7. The studies may be given in lectures, or may consist of individual work of students under the direction of the instructor.

8. The Phenomena of Sound in their relation to Music and Musical Instruments. Lectures and experiments. *Mon., 4.00.* (s)

PROFESSOR DOLBEAR.

The first half-year's work in Physics 1 must have been done by those who elect Music 8.

THE FINE ARTS

PROFESSOR WHITTEMORE

The department of the Fine Arts stands collaterally with literature and music—offering an opportunity for the study of the history of painting, sculpture, architecture, and the minor arts. The subjects given are open to Sophomores, Juniors, and Seniors.

1. The History of Greek Art, with an introduction on the Arts of Egypt, Assyria, and Phœnicia. *Mon., Wed., Fri., 9.45.*

PROFESSOR WHITTEMORE.

[2. The Fine Arts of the Middle Ages. *Mon., Wed., Fri., 9.45.*

PROFESSOR WHITTEMORE.]

[3. The Fine Arts of the Renaissance. *Mon., Wed., Fri., 9.45.*

PROFESSOR WHITTEMORE.]

PHYSICAL TRAINING

DR. STROUD AND MISS CARVILL

Regular exercise in the gymnasium is required three hours a week of all undergraduate students for the two years following entrance, from November to April. The work is optional during the remaining years of the course. Preceding the practical work in the gymnasium, the Freshmen will be given a series of lectures on the hygiene of diet, bathing, exercise, and personal habits. The aim of the department is to secure the interest

and participation of the students in such exercise and training as each and all need for corrective, hygienic, or recreative purposes. A healthy body, erect carriage, self-control, fearlessness, and muscular co-ordination are among the objects sought. In addition to class drills in free movements with wands, dumb-bells, and Indian clubs, and exercises in squads, on the various kinds of mixed apparatus, a special exercise card is made out for each student, as the result of a careful medical examination, measurement, and strength test. Out-door sports are fostered, but care is taken that the students do not exercise beyond their capacity, it being the intention to make the physical training of such character that the weakest as well as the strongest can engage in it with profit.

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* this year are bracketed in department statements
The prefixed w signifies whole year; F, first half-year; S, second half-year
M Tu W Th F S indicate days for two-period and one-period subjects

MONDAY, WEDNESDAY, FRIDAY

	8.45	9.45	10.45	11.45
CAPEN				
LEONARD				
SCHNEIDER				
BOLLES	Hst w2		Hst w3	
SHIPMAN				
DOLBEAR			Phs w1	
HARMON				
FAY	Ger w6	Frn w6	Ger w5	
TOUSEY			Phl F6, S8	Phl w15
KNIGHT				
WOODBRIDGE				
KINGSLEY				Bio F5 M *lect*
MICHAEL				
CUSHMAN		Phl F10,S11,12,13	Phl w9	
LEWIS	Frn w2	Frn w1		Mus S6
MAULSBY	Eng F17	Eng w25, 26	Eng w19, 20	
DURKEE			*Chm* S8 WF	
DENISON				Lat w3, 4
EVANS	PbL F4, 6, S5, 7		Hst w1	PbL F1, S2
H. G. CHASE	Phs S3 W *lect*	*Phs* S3	*Phs* S3	Phs S2, 3, F4
METCALF	PlS F180, S3	PlS w2		
WADE		Grk w1		
WHITTEMORE	Eng S18	EnA w1, 2, 3		Eng w10, 15
WREN		Mth S7		
LAMBERT		*Bio* w7 WF	*Bio* w7 WF	*Bio* w7 WF *lect*
RANSOM		Mth F6	Mth w14	Mth F4, S5
REED	Ger w2	Ger w1		
RICHARDS			Geo w2	Geo w2
SMITH				
MURPHY		Chm F10		*Chm* S11 MW
STROUD				

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* this year are bracketed in department statements
Subjects in Roman type occupy three periods
Subjects in *Italic* type occupy two periods; in **Boldface** type, one period

MONDAY, WEDNESDAY, FRIDAY

	2.00		4.00	5.00*
CAPEN				
LEONARD				
SCHNEIDER				
BOLLES				
SHIPMAN				
DOLBEAR			**Mus** s8 M	**Phs** s8
HARMON		Hst F12	Hst W11	
FAY	Frn W4			
TOUSEY				
KNIGHT				
WOODBRIDGE				
KINGSLEY	*Bio* W2, 3, F5 MF	*Bio* W2, 3, F5 MF	*Bio* W2, 3 MF *lec*	**ScGer**, Geo FS3
MICHAEL				Chm 12, 13, 14
CUSHMAN				
LEWIS		Frn W5		Mus W7
MAULSBY	Eng W12			**Eng** W28, S11
DURKEE	*Chm* W1 WF *lect; also* 2-5, *Chm*		W4, 5 MF, F9 M	*Chm* S05
DENISON		Lat W2		ClA F1, 3, S5
EVANS		Hst F4, 6, S5, 7		*Hst* W15
H. G. CHASE	*Phs* W5 MWF	*Phs* W5 MWF	*Phs* W5 MWF	*Phs* W5 MF
METCALF			PlS S7	
WADE	Grk W2			ClA S2, F4, S6
WHITTEMORE				**Eng** F23
WREN				*Mth* S11
LAMBERT	*Bio* W7 WF	*Bio* W7 WF		
RANSOM				
REED				
RICHARDS		Geo S1 W		
SMITH	**Chm** W1 M	**Chm** W1 M	**Chm** W1 M	
MURPHY				
STROUD			**Phs Trn** M	Phs Trn

*Hours in this column are subject to re-assignment during the opening week

Assignments for current year are given under the statements of the respective departments in the complete catalogue

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* this year are bracketed in department statements
The prefixed W signifies whole year; F, first half-year; S, second half-year
M Tu W Th F S indicate days for two-period and one-period subjects

TUESDAY, THURSDAY, SATURDAY

	8.45	9.45	10.45	11.45
CAPEN		PhL F3		
LEONARD				Eng W27
SCHNEIDER	Grk W4	Grk W5		
BOLLES				
SHIPMAN			Phl F3, S4	
DOLBEAR				
HARMON				
FAY	Ger W3		Ital W1	*Frn W,3b* Tu Sa
TOUSEY			Phl S7	
KNIGHT	Hst F13			Phl W16
WOODBRIDGE		Hst W14		Heb W1
KINGSLEY				*Bio* F1 TuTh, S4
MICHAEL				
CUSHMAN		Phl F1, 2, S5		Ped S1
LEWIS	Frn W3			Mus W4, 5
MAUTSBY	Eng F13, S14		Eng F1, S7	
DURKEE	8.45–11.45 : **Chm** F2, S3, W4, 5S ; . . . . . *also*, 9.45–			12.45 ; **Chm** 1, Tu
DENISON	Lat W1a	Lat W1b		
EVANS				
H. G. CHASE				
METCALF	PlS F4, S5	PlS W6	PlS W1	
WADE		Grk W1		Grk W3
WHITTEMORE			Eng F16, S2	
WREN				
LAMBERT				*Bio* S1 TuTh
RANSOM	Mth F1a, S3	Mth F1b, S2		
REED		*Ger W,3b* TuTh		Ger W4
RICHARDS			Min F1, S2, *Geo* S1	Min F1, S2
SMITH		**Chm** W1 Tu	**Chm** W1 Tu	**Chm** W1 Tu
STROUD				

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* this year are bracketed in department statements
Subjects in Roman type occupy three periods
Subjects in *Italic* type occupy two periods; in **Boldface** type, one period

TUESDAY, THURSDAY

	2.00	3.00	4.00	5.00*
CAPEN				
LEONARD				
SCHNEIDER				
BOILES		*Hst* P5, S9		
SHIPMAN		*Eng* P5		Eng P8
DOLBEAR				Phl S14
HARMON				
FAY				
TOUSEY				
KNIGHT				
WOODBRIDGE				Heb W2
KINGSLEY	*Bio* P1, S4	*Bio* P1, S4		Bio PS6, W8
MICHAEL				Chm 15,16,17
CUSHMAN				
LEWIS		*Mus* W2	**Mu** W2 Th, F3, S1	
MAULSBY	**Ora** W1 a**Tu**, b**Th**	*Ora* S7		**Ora** W2, 3, 4
DURKEE	*Chm* F2, S3, 7	*Chm* F2, S3, 7	*Chm* F2, S3, 7	
DENISON	**Lat** W5 Tu, 6 Th			**Lat** W7, F8, S9, 10
EVANS				
H. G. CHASE	*Phs* S3	*Phs* S3	*Phs* S3	Phs F9
METCALF				PlS W8
WADE				**Grk** W6, 7, S8, 9
WHITTEMORE				
WREN				Mth P12, S13
LAMBERT	*Bio* W1	*Bio* W1		
RANSOM				Mth P9, S10
REED				
RICHARDS				Geo PS3, 4
SMITH				
STROUD				Phs Trn

* Hours in this column are subject to re-assignment during the opening week

Assignments for current year are given under the statements of the respective departments in the complete catalogue

Courses in Science *

The special courses in Science lead to the degree of Bachelor of Science. They are intended for graduates of high schools who wish to prepare themselves for specialized scientific work. Like the Engineering courses, they are placed upon a technical basis, and far less latitude is allowed the student in the choice of subjects than in the course in Arts, the election being made when the course is chosen. In addition to the studies given below for each course, students must elect other studies so as to make the total one hundred and twenty-eight term hours.

COURSE IN GENERAL SCIENCE

PROFESSOR KINGSLEY

Freshman Year

English 1. The Theory and Practice of Composition. (*First half-year.*) See page 58.

English 2. A Study of Expression. (*Second half-year.*) See page 58.

German 1. Elementary German. See page 62.

Or **German 2.** Intermediate German. See page 62.

French 1. Elementary French. See page 63.

Or **French 2.** Intermediate French. See page 63.

The order in which French and German are followed depends upon the language submitted for admission to the College. A student admitted with French will take French 2 and German 1, or, with German, will take German 2 and French 1.

Physics 1. General Physics. See page 80.

Chemistry 1. General Chemistry. See page 83.

Biology 1. General Biology. See page 85.

Physical Training.

* For entrance requirements to the Courses in Science, see pages 39 and 40.

Sophomore Year

German 2. As above.

Or **German 3.** For the rapid reading of modern prose. (*First half-year.*) See page 62.

And **Biological German.** Reading of some important biological work. *Two hours a week.* (*Second half-year.*)

French 2. (For those entering with German.)

Biology 2 or 3. General Biology. See page 85.

Mathematics 1, with 2 or 3. Algebra, Geometry, Trigonometry. See pages 78 and 79.

Chemistry 2. Qualitative Analysis. See page 83.

Chemistry 3. Qualitative Analysis. See page 83.

Physical Training.

Junior Year

German 3 and Biological German (for those entering with French), as above.

Physics 3. Physical Laboratory. See page 80.

Chemistry 10. Organic Chemistry. See page 84.

Biology 2 or 3. See page 85.

Biology 4. Elementary Physiology. See page 85.

Biology 5. Histology. See page 86.

Senior Year

Geology 1. Physiography. See page 87.

Philosophy 1 or 2. Introductory subject. (*First half-year.*) See Page 70.

Philosophy 5. Psychology. (*Second half-year.*) See page 71.

Biology 7. Botany. See page 86.

Mineralogy 1. Determinative Mineralogy. See page 87.

Geology 2. Geology. See page 87.

Special work (six term hours) in Biology, Geology, Chemistry, or Electricity.

COURSE IN BIOLOGY

PROFESSOR KINGSLEY

Freshman Year

As in the Freshman year of the course in General Science.

Sophomore Year

As in the Sophomore year of the course in General Science, except Mathematics.

Junior Year

German 3B. (*First half-year.*) **Biological German.** (*Second half-year*, for those entering with French.) **Biology** 2 or 3, and 4, and 5, and Geology, as in the Senior year of the course in General Science.

Philosophy 1 (or 2) and 5, as in the Senior year of the course in General Science.

Chemistry 10. Organic Chemistry. See page 84.

Senior Year

Mineralogy 1 and Geology 2, as in the Senior year of the course in General Science.

Biology 7. Botany. See page 86.

Biology 8. Special Research in Biology, including dissertation. *Twelve hours.*

MEDICAL PREPARATORY COURSE

PROFESSOR KINGSLEY

Freshman Year

As in the Freshman year of the course in General Science.

Sophomore Year

As in the Sophomore year of the course in Biology.

Junior Year

As in the Junior year of the course in Biology.

Senior Year

Philosophy 3. Logic, especially Deductive. See page 70.

Philosophy 6. Ethics, the Theory of Morals. See page 70.

Human Anatomy and Physiology. (At Tufts Medical School.)

Medical Chemistry. (At Tufts Medical School.)

COURSE IN CHEMISTRY

PROFESSOR DURKEE

Freshman Year

English 1. The Theory and Practice of Composition. (*First half-year.*) See page 58.

English 2. A Study of Expression. (*Second half-year.*) See page 58.

German 1. Elementary German. See page 62.

Or **German 2.** Intermediate German. See page 62.

Those entering with German will take German 2. Others will take German 1.

Mathematics 1, with 2 or 3. Algebra, Solid Geometry, and Trigonometry. See pages 78 and 79.

Physics 1. General Physics. See page 80.

Chemistry 1. General Chemistry. See page 83.

Mechanical Drawing. *Two hours a week (first half-year).* See page 88.

Elective. *Three hours a week (second half-year).*

Physical Training.

Sophomore Year

German 2. As above.

Or **French 1.** Elementary French. See page 63.

French 1 will be taken by those who entered without French. Others will take German 2.

Physics 3. Physical Laboratory. See page 80.

Chemistry 2. Basic Qualitative Analysis. See page 83.

Chemistry 3. Qualitative Analysis of Acids, Salts, Commercial and Natural Products. See page 83.

Chemistry 4. Quantitative Analysis, Gravimetric and Volumetric; Analysis of Minerals. See page 83.

Chemistry 10. Organic Chemistry. See page 84.

Chemistry 11. Theoretical Chemistry. See page 84.

Physical Training.

Junior Year

Chemistry 5. Quantitative Analysis (advanced). See page 83.

Mineralogy 1. See page 87.

Chemistry 8. Metallurgy. See page 83.

Chemistry 12. Theoretical and Inorganic Chemistry (advanced). See page 84.

Chemistry 13. Organic Chemistry (advanced). See page 84.

Chemistry 14. Laboratory work in Inorganic Preparations. See page 84.

Chemistry 15. Laboratory work in Organic Analysis. See page 84.

Biology 1. General Biology. See page 85.

Political Science 1. Elements of Political Economy, and Practical Problems. See page 76.

Senior Year

Biology 4. Elementary Physiology. See page 85.

Chemistry 7. Fire Assay. See page 83.

Chemistry 9. Gas Analysis. See page 84.

Chemistry 13. Organic Chemistry (advanced). See page 84.

Elective. *Six hours a week.*

Research and Thesis. *Four hour a week* (*first half-year*) ; *ten hours a week* (*second half-year*).

THE DEPARTMENT OF ENGINEERING

Faculty of the Department of Engineering

ELMER H. CAPEN, A.M., D.D., LL.D., PRESIDENT . 8 Professors Row

GARDNER C. ANTHONY, A.M., DEAN . . . . . 14 Professors Row
Professor of Technical Drawing

HARRY G. CHASE, B.S., SECRETARY . . . . . 2 Curtis Avenue
Assistant Professor of Physics

CHARLES D. BRAY, C.E., A.M. . . . . 98 Professors Row
Professor of Mechanical Engineering

AMOS E. DOLBEAR, M.E., PH.D., LL.D. . . . 134 Professors Row
Professor of Physics

CHARLES E. FAY, A.M., LITT.D. . . . . 92 Professors Row
Wade Professor of Modern Languages

WILLIAM L. HOOPER, A.M., PH.D. . . . . 124 Professors Row
Professor of Electrical Engineering

FRANK B. SANBORN, C.E., M.S. . . 8 Buena Vista Park, Cambridge
Professor of Civil Engineering

FRANK W. DURKEE, A.M. . . . . 38 Professors Row
Professor of Inorganic Chemistry

HENRY C. METCALF, A.B., PH.D. . . . . 92 Professors Row
Jackson Professor of Political Science

FRANK G. WREN, A.M. . . . . 114 Professors Row
Walker Professor of Mathematics

CHARLES H. CHASE, S.B. . . . . Stoneham
Assistant Professor of Steam Engineering

EDWARD H. ROCKWELL, S.B. . . . 113 Powder House Boulevard
Assistant Professor of Civil Engineering

SAMUEL C. EARLE, A.M. . . . . 9 Electric Avenue
Assistant Professor of English

THOMAS WHITTEMORE, A.B. . . . . ΘΔX House
Professor of English

CHARLES C. STROUD, A.B., M.D. . . . Allen House, Sawyer Ave.
Instructor in Physical Training

WILLIAM H. REED, JR., A.M. . . . . 81 Walnut Ave., Roxbury
Instructor in German

ARTHUR MURPHY, JR., A.M. . . . . 16 Dearborn Road
Instructor in Theoretical and Organic Chemistry

HOWARD D. SMITH, B.S., B.PH. . . . . 11 Fairmount Avenue
Instructor in Inorganic Chemistry

LLEWELLYN R. PERKINS, B.S., A.B. . . . . 72 Professors Row
Walker Special Instructor in Mathematics

EDWIN B. ROLLINS, B.S. . . . . 1 West Hall
Instructor in Electrical Engineering

GEORGE F. ASHLEY . . . . . 11 Laurel St., Somerville
Instructor in Drawing

CHARLES E. STEWART, S.B. . . . 34 Emery St., Medford Hillside
Instructor in Shopwork

PHILIP M. HAYDEN, A.B. . . . . Dean Hall, 6
Instructor in French

JAMES I. TUCKER, B.S. . . . . 46 Pearl St., Medford
Instructor in Civil Engineering

MELVILLE S. MUNRO, B.S. . . . . 59 George St., Medford
Assistant in Electrical Engineering

HERBERT M. MORLEY, M.S. . . . . Dean Hall, 1
Assistant in Mathematics

COMMITTEE ON PROMOTIONS

Dean Anthony, *Chairman;* Professors Hooper and Wren

Department of Engineering

The department offers courses of four years in CIVIL ENGINEERING, MECHANICAL ENGINEERING, ELECTRICAL ENGINEERING, AND CHEMICAL ENGINEERING, each leading to the degree of Bachelor of Science. Each course is arranged to permit of considerable freedom of election in each of the other courses. Election may also be made in the College of Letters.

While most of the instruction is given in engineering subjects, leading to a professional degree, the primary object of the department is to give a broad education which shall promote the highest development of every student who may seek instruction through any of its courses.

The Department of Engineering is open to all earnest students, whether they are candidates for a degree, or desire special courses. Through its scientific fitting school it offers unusual advantages to those whose previous preparation has been in the field of practice rather than theory, and whose training in the rudimentary branches may be deficient.

REQUIREMENTS FOR ADMISSION

Candidates for admission to the Engineering Department must have received adequate preparation in certain required subjects, as follows:—

Elementary English;	***One Elementary Foreign Language;**
Algebra;	**Plane and Solid Geometry.**

From the following list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group aggregating three units:

Elementary History, 1 or 2	**Mechanical Drawing, 1**
Physics, 1 or 2	**Freehand Drawing, 1**
Chemistry, 1 or 2	**Shop Work, 1**

Detailed statements concerning these admission requirements will be found on pages 39 to 52.

*Students will find it an advantage to present both French and German. Preparatory work in Modern Languages above the entrance requirements may be counted toward the degree of B.S. in Engineering on the conditions stated on page 144.

EXPENSES

The following estimates represent the fixed annual expenses:

Tuition	$120.00	$120.00
Physical culture, including gymnasium and grounds	10.00	10.00
Reading-room	1.00	1.00
Half room-rent	20.00	91.00
Hospital	2.00	2.00
Board, $4.00 to $5.00 a week (36 weeks)	144.00	180.00
Total	297.00	$404.00

SPECIAL CHARGES. Chemical Laboratory charges for breakage (average)	$4.00
Chemical Laboratory charges for chemicals	8.00
Instruments, books, and general supplies (if new)	15.00 to 25.00
Non-resident students not hiring rooms at the college are subject to a fixed charge of	10.00

As an aid toward meeting expenses, there are many opportunities for work in the shops, laboratories, and drafting rooms, for which a fixed rate of compensation is established. Applications for these positions should be made to the Dean, and the appointments must be confirmed by the Engineering Faculty.

For a list of available scholarships, and for further regulations concerning expenses, consult the table of contents under "General Information."

The Degree of Civil Engineer, Electrical Engineer, Mechanical Engineer, or Master of Science will be conferred upon Bachelors of Science in Civil, Electrical, or Mechanical Engineering, who shall satisfactorily pursue advanced professional study at the College for one year, under the conditions required of candidates for the Degree of Master of Arts; or who shall present suitable evidence of three years of professional work, one year of which must be in a position of responsibility, in which case a certain amount of professional study will be assumed. A thesis based upon this study will be required. For the detailed conditions under which these degrees are granted, consult the table of contents under the "Graduate Department."

Further information concerning the Department of Engineering will be found in a special pamphlet, to be obtained by addressing Dean Anthony, Tufts College, Mass.

A. B. AND B. S. IN FIVE YEARS

Provision has been made, for such students as are prepared to enter upon the course leading to A.B. (see pages 39 to 52), to secure the degrees of Bachelor of Arts and Bachelor of Science in five years.

In order to obtain both degrees at the end of five years, Freshmen should enter with one unit of credit in Solid Geometry, under the Secondary Group (pages 40, 45, 49).

The work in College would then be distributed as follows:—

Freshman Program

	TERM HOURS
Languages	18
Physics 1	6
Mathematics 1 and 3	6
English 1 and 2	6

Engineering must be chosen as the major department.

Sophomore Program

First half-year:

	TERM HOURS
History 1	3
Philosophy 3	3
Mathematics 40	3
Shop-work 40	2
Drawing 20	2
Freehand Drawing 22	1
Elective	3
	17

Second half-year:

	TERM HOURS
History 1	3
Philosophy 4 or 5	3
Drawing 20	3
Drawing 21	1
Drawing 23	2
Shop-work 42	1
Elective	3
	16

The third, fourth, and fifth years correspond to the Sophomore, Junior, and Senior years of the course in Engineering selected by the student (see pages 117 to 123), except that an elective is allowed in place of the modern language required in the Sophomore year.

Courses of Instruction

It is believed that four years spent mainly upon technical subjects, yet providing opportunity for such language study as will enable the student to become familiar with foreign books of scientific value, will furnish a solid foundation for advanced theoretical attainment and professional skill. Considerable freedom is allowed in the choice of electives during the Junior and Senior years.

The program is so arranged as to require of each student about fifty hours of work per week. This includes the time necessary for the recitation and its preparation, together with hours for laboratory work.

The subjects of instruction in the Freshman year are alike for all courses. The outlines of the courses for the three following years are tabulated under the heads of Civil Engineering, page 117, Mechanical Engineering, page 119, Electrical Engineering, page 121, Chemical Engineering, page 123.

The figures in the column at the right indicate the number of the subject. The details of these studies will be found on pages 124 to 145.

FRESHMAN YEAR

[Alike for all courses.]

First Term	No.	Second Term	No.
Algebra	1	Analytical Geometry	5
Trigonometry	3	Descriptive Geometry	21
Mechanical Drawing	20	Mechanical Drawing	20
Freehand Drawing	22	Technical Sketching	23
Carpentry, Turning, and Foundry	40	Pattern Making	42
Physics	70	Physics	70
English	140	English	141
French or	161	French or	161
German	166	German	166
Physical Training	185	Physical Training	185

CIVIL ENGINEERING

The studies which underlie general engineering and science —mathematics, drawing, modern languages, physics, and chemistry—dominate the course during the first two years, but during this period the student also pursues a practical training in courses of shopwork and field surveying.

In the last two years instruction follows in precise surveying, hydrography, topography, and railroad surveying, about two-thirds of the time being spent in actual field practice, for which the college location affords excellent advantages; mechanical properties of timber, cement, iron, and steel, are studied in the class room and in the testing laboratory; outline and detail designs for roofs, bridges, arches and other structures are made in a well-equipped drafting room; the methods of water purification, water supply for towns, systems of drainage, sewerage, and sewage disposal receive careful attention by general study and visits to some of the excellent municipal plants near at hand.

Elective studies are offered in Junior and Senior year which permit the student to take important courses in mathematics, chemistry, or electrical and mechanical engineering. By this means his knowledge of other engineering subjects may be extended, and he will be fitted to follow general engineering practice, or to choose intelligently some branch of the profession in which he can advisedly specialize. Specialization is thus possible during these last two years, but in no way is it forced upon the student.

In fact a comprehensive course of study offers many advantages; and present demands in bridge, structural, hydraulic, and sanitary engineering, fire protection, general surveying, mill and masonry construction, are such that the course in civil engineering which includes these subjects must be a broad one, enabling its graduates to advance rapidly in numerous fields of work. This department has endeavored to shape its methods of instruction so as to meet satisfactorily these requirements of the profession of civil engineering.

CIVIL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 115.

SOPHOMORE YEAR

First Term	No.	Second Term	No.
Calculus	7	Calculus	7
Mechanism	25	Forging	44
General Chemistry	50	General Chemistry	50
Surveying	90	Physical Laboratory	72
English	142	Surveying	91
French or	162	English	143
German	167	French or	162
Physical Training	185	German	167
		Physical Training	185
		Machine Drawing (*elective*)	26

JUNIOR YEAR

First Term	No.	Second Term	No.
Applied Calculus	8	Fire Protection—Hydrography	93
Qualitative Analysis	52	Masonry or Sanitary Engineering	111 or 109
Precise Surveying—Jurisprudence	92	Applied Mechanics	113
Pure Mechanics	112	Experimental Mechanics	116
Experimental Mechanics	115	Structural Design	117
Steam Engine	120	* *Three of the following electives:*	
* *Two of the following electives:*		Differential Equations	9
Machine Drawing (advanced)	27	Least Squares	11
Machine Shop	45	Machine Design	28
Mineralogy	59	Qualitative Analysis	53
† Electrical Laboratory	73	†Electrical Laboratory	73
Electricity and Magnetism	74	Dynamo-Electric Machinery	77
Highways	99	Steam Engineering	121
English		English	
Modern Languages		Modern Languages	

SENIOR YEAR

First Term	No.	Second Term	No.
Railroad Surveying	94	Hydraulics	110
Railroad Engineering	95	Sanitary Engineering or Masonry	109 or 111
Roofs and Bridges	97	Thesis	135
Highways	99	* *Two of the following electives:*	
Political Economy	180	Mathematics	
* *Two of the following electives:*		Quantitative Analysis	61
Mathematics		Applied Chemistry	65
Mineralogy	59	Assaying	67
Quantitative Analysis	61	Railroads—Economic Locations	96
Gas Analysis	63	Bridge Design	98
Highways	99	Steam Engineering	121
Applied Mechanics	114	Geology	130
Structural Design	118	English	
Engineering Laboratory	123	Modern Languages	
English			
Modern Languages			

Electives must be approved by the Department.

† No. 73 must be taken for the entire year, and preceded by, or taken with, 74.

MECHANICAL ENGINEERING

The course of instruction in mechanical engineering relates particularly to machinery,—its design, construction, and operation. The first two years are devoted to the preparatory studies common to all engineering courses, and include mathematics, physics, chemistry, drawing, and language, all of which have an important bearing upon the successful pursuit of the more technical subjects. Technical drawing and descriptive geometry receive much attention during the first year, and are more completely developed in the advanced work in mechanism and design.

In the last two years the technical work of the course is developed. It includes mechanics, both pure and applied, chemical analysis, and the properties of engineering materials, particularly iron and steel. The laboratory practice includes work in the physical, chemical, electrical, mechanical, and steam-engineering laboratories. In machine design each student prepares complete working drawings of some machine, or part of a machine. Shop work is carried through four terms, and includes carpentry, wood-turning, moulding, pattern-making, forging, vise and machine tool-work.

The systematic study of steam and its application occupies a considerable part of the Junior and Senior years. The principles involved in the generation and application of power, the management of boilers and engines, the setting of valves and use of the indicator, are carefully considered. This is followed by work in thermodynamics, including the mechanical theory of heat and the properties of steam and gases. Steam engineering includes the study of the steam engine, compound and multiple expansion, and of boilers of various types; determination of proportions for developing a required power; computation of sizes required for strength and endurance; the effect and balance of reciprocating parts, and the various types of valve motions. Engine and boiler testing constitute an important part of this course.

MECHANICAL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 115.

SOPHOMORE YEAR

First Term	No.	Second Term	No.
Calculus	7	Calculus	7
Mechanism	25	Machine Drawing	26
General Chemistry	50	Forging	44
Surveying	90	General Chemistry	50
English	142	Physical Laboratory	72
French or	162	English	143
German	167	French or	162
Physical Training	185	German	167
		Physical Training	185
		Surveying (*elective*)	91

JUNIOR YEAR

First Term	No.	Second Term	No.
Applied Calculus	8	Differential Equations	9
Machine Drawing	27	Machine Design	28
Qualitative Analysis	52	Machine Shop	45
Electricity and Magnetism	74	Applied Mechanics	113
Pure Mechanics	112	Experimental Mechanics	116
Experimental Mechanics	115	Steam Engineering	121
Steam Engine	120	* *Two of the following electives:*	
* *One of the following electives:*		Qualitative Analysis	53
Electrical Laboratory	73	Metallurgy	57
Precise Surveying—Jurisprudence	92	Electrical Laboratory	73
English		Dynamo-Electric Machinery	77
Modern Languages		Sanitary Engineering	109
		English	
		Modern Languages	

SENIOR YEAR

First Term	No.	Second Term	No.
Machine Design	29	Engineering Laboratory	123
Applied Mechanics	114	Hydraulics	110
Steam Engineering	122	Thesis	135
Engineering Laboratory	123	* *Two of the following electives:*	
Political Economy	180	Mathematics	
* *Two of the following electives:*		Quantitative Analysis	61
Mathematics		Applied Chemistry	65
Quantitative Analysis	61	Electricity	83
Gas Analysis	63	Topics	85
Electricity	82	Sanitary Engineering	87
Dynamo Design	88	Structural Design	109
Roofs and Bridges	97	Bridge Design	117
			98

* Electives must be approved by the Department.

ELECTRICAL ENGINEERING

The aim of the course in electrical engineering is to fit men to deal intelligently with electrical problems likely to be presented to the practical engineer.

With this end in view, mathematics and drawing are pursued through nearly the entire course. Physics and mechanics, both pure and applied, receive much attention, while more than half of the Senior year is devoted to the study of electricity by means of practical work in the electrical laboratory, together with recitations and lectures on the principles involved. The purely electrical work extends over the Junior and Senior years of the course, the Junior year being devoted to the more elementary theory and the practice of the simpler tests and measurements, the Senior year to the more advanced theory and the practice of the more complex tests and measurements.

The calibration and standardization of electrical instruments receive due attention. The magnetic properties of irons, armature reactions in dynamos, the efficiency of electrical machinery, and the location of losses are carefully studied. The theory of shunts and the Wheatstone bridge leads to the consideration of the distribution of current and potential in a network of conductors.

Much time is given to design and construction. Most students during their course construct or assist in the construction of some piece of electrical machinery of commercial dimensions.

The theory of alternating currents, both single and polyphase, is fully developed; and the many important practical problems thus evolved are carefully treated, both by numerical computation and by graphic representation.

A few weeks are devoted to the study of Maxwell's theory and its experimental confirmation by Hertz.

ELECTRICAL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 115.

SOPHOMORE YEAR

First Term	No.	Second Term	No.
Calculus	7	Calculus	7
Mechanism	25	Machine Drawing	26
General Chemistry	50	Forging	44
Surveying	90	General Chemistry	50
English	142	Physical Laboratory	72
French or	162	English	143
German	167	French or	162
Physical Training	185	German	167
		Physical Training	185
		Surveying (*elective*)	91

JUNIOR YEAR

First Term	No.	Second Term	No.
Applied Calculus	8	Differential Equations	9
Qualitative Analysis	52	Machine Design	28
Electrical Laboratory	73	Electrical Laboratory	73
Electricity and Magnetism	74	Electricity	76
Pure Mechanics	112	Dynamo-Electric Machinery	77
Experimental Mechanics	115	Applied Mechanics	113
Steam Engine	120	Experimental Mechanics	116
* *One of the following electives:*		* *One of the following electives:*	
Machine Drawing	27	Mathematics	
Precise Surveying—Jurisprudence	92	Machine Shop	45
English		Qualitative Analysis	53
Modern Languages		Metallurgy	57
		Fire Protection—Hydrography	93
		Sanitary Engineering	109
		† Masonry	111
		Steam Engineering	121
		English	
		Modern Language	

SENIOR YEAR

First Term	No.	Second Term	No.
Electrical Laboratory	79	Electrical Laboratory	79
Electricity	82	Electricity	83
Dynamo Design	88	Telegraph and Telephone	87
Political Economy	180	Hydraulics	110
* *Three of the following electives:*		Thesis	135
Mathematics	20	* *Two of the following electives:*	
Machine Design	61	Mathematics	
Quantitative Analysis	63	Quantitative Analysis	61
Gas Analysis	59	Applied Chemistry	65
Mineralogy	84	Assaying	67
Mathematics of Alternating Currents	88	Electrical Topics	85
Railroad Engineering	95	Magnetism	86
Applied Mechanics	97	Sanitary Engineering	109
Roofs and Bridges	114	† Masonry	111
Engineering Laboratory	231		

* Electives must be approved by the Department.

† Omitted in 1904—1905.

CHEMICAL ENGINEERING

The course in chemical engineering covers a period of four years, and leads to the degree of Bachelor of Science in Chemical Engineering.

The subjects in this course have been arranged to give the training in mathematics, physics, chemistry, and mechanical engineering that will assist the graduates of the department in solving the mechanical and chemical problems that present themselves when chemistry is applied in practical ways. Subjects intended for general training, the greater part of the pure mathematics and the less technical engineering subjects, have purposely been introduced early in the course. This arrangement allows much time for the study of subjects in chemical and advanced mechanical engineering in the last two years. The mathematical, physical, and general engineering subjects, as well as subjects that are intended for general culture, correspond, for the most part, to those of the course in mechanical engineering.

In chemistry the subjects are numerous enough to train the student thoroughly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the different branches of chemical analysis, and to make him familiar with many of the practical applications of chemistry. The chemical and engineering subjects are taught, so far as it is possible, in the laboratories, and excursions are made from time to time to plants where technical chemical operations are performed.

Young men who graduate from the course in chemical engineering find employment in constructing and operating plants where chemistry is applied commercially, such as gas-works, dye-works, bleacheries, paper and pulp mills, acid and alkali manufactories.

CHEMICAL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 115.

SOPHOMORE YEAR

First Term	No.	Second Term	No.
Calculus	7	Calculus	7
Mechanism	25	Machine Drawing	26
General Chemistry	50	Forging	44
Surveying	90	General Chemistry	50
English	142	Physical Laboratory	72
French or	162	English	143
German	167	French or	162
Physical Training	185	German	167
		Physical Training	185

JUNIOR YEAR

First Term	No.	Second Term	No.
Applied Calculus	8	Differential Equations	9
Qualitative Analysis	52	Qualitative Analysis	53
Organic Chemistry	55	Metallurgy	57
Electricity and Magnetism	74	Quantitative Analysis	61
Pure Mechanics	112	Applied Mechanics	113
Experimental Mechanics	115	Experimental Mechanics	116
Steam Engine	120	* *Two of the following electives:*	
		Machine Shop	45
		Dynamo-Electric Machinery	77
		Sanitary Engineering	109
		†Masonry	111
		Structural Design	117

SENIOR YEAR

First Term	No.	Second Term	No.
Machine Drawing	27	Quantitative Analysis	61
Mineralogy	59	Applied Chemistry	65
Quantitative Analysis	61	Assaying	67
Gas Analysis	63	Theoretical Chemistry	69
Political Economy	180	Hydraulics	110
* *Three of the following electives:*		Thesis	135
Mathematics		* *One of the following electives:*	
Electricity	82	Mathematics	28
Roofs and Bridges	97	Machine Design	109
Applied Mechanics	114	Sanitary Engineering	111
Structural Design	118	† Masonry	117
		Structural Design	

Electives must be approved by the Department.

† Omitted in 1904-1905.

Departments

MATHEMATICS

The required work in mathematics covers the first three years of the course. During this period the subjects pursued are treated with special reference to the demands of the engineering profession. The instruction, while having this end in view, endeavors to train the mathematical faculties so that the student may acquire the ability for research work. On this account, as the course progresses, the method of instruction varies gradually from text-book work to lectures by the instructor.

The extent of the course in the required branches is limited to subjects of importance to engineers: viz., in Algebra (1) the subjects usually found in college algebras previous to the theory of equations; in Trigonometry (3) the ordinary formulæ of relations between angles, and their applications in the solution of right and oblique triangles; in Analytic Geometry (5) the properties of the straight line and the conic sections; in Calculus (7) (8) the most important principles, such as are treated in Osborne's Calculus, supplemented by a course of lectures on the application of the subject to physical and mechanical phenomena; in Differential Equations (9) the solution and geometrical interpretation of total differential equations of first and second orders.

To those who desire additional work in the department of mathematics the following list of electives is offered: Spherical Trigonometry (4), Theory of Least Squares (10), and Determinants (11). These subjects are treated so as to render the knowledge of practical value to the engineer. For those pursuing graduate study Vector Analysis (12) and the Theory of the Potential Function (13) are offered as instruments for investigating the more complex physical phenomena.

MATHEMATICS

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
1	Algebra	1	1	4	1	Morley	C E M Ch
3	Plane Trigonometry	1	1	2	1	Perkins	E E M Ch
5	Plane Analytic Geometry	1	2	3	1	Wren	C E M Ch
7	Differential and Integral Calculus	2	1, 2	3	1	Perkins	C E M Ch
8	Applied Calculus	3	1	2	1	Rockwell	C E M Ch
9	Differential Equations	3	2	2	1	Wren	E M Ch
10	Theory of Determinants	4	1	3	1	Wren	Elective
11	Theory of Least Squares	3 or 4	2	2	1	Wren	Elective
12	Vector Analysis	4	1	3	1	Wren	Elective
13	Theory of the Potential Function	4	2	3	1	Wren	Elective

DRAWING

The threefold object of the studies pursued in the department of drawing is: first, the acquirement of precision and rapidity in the manipulation of instruments, together with the development of the theory of technical drawing; second, a study of the technique of graphic expression as employed in the modern drafting-room; third, a practical application of the preceding to the investigation of problems susceptible of a graphic solution, including the principles of machine design.

The work in Mechanical Drawing (20) comprises geometrical drawing, the various systems of projection, graphic solution of conic sections, tinting, shading, tracing, the helix and its application to screw-threads and bolts. Lettering and Technical Sketching (23) are taught at the same time as a necessary preparation for machine and topographical drawing.

Descriptive Geometry (21) is taught by means of lectures, recitations, and the graphic solution of a great number of problems. The study includes the elements of warped surfaces.

The classes in both Elementary (26) and Advanced (27) Machine Drawing are conducted according to the methods of progressive draftsmen. All details are drawn from sketches made by the students, nothing in the nature of a copy being permitted.

Mechanism (25) theoretical, and as applied to the delineation of gear-teeth, cams, and other mechanical motions, is designed to involve the minimum of drawing needed to obtain a thorough mastery of the principles.

Machine Design (28) is begun by the solution of simple problems involving only the elementary principles of applied mechanics, but requiring careful thought, close observation, and good judgment. A systematic training of the judgment is made of first importance. In Advanced Machine Design (29) the student is required to design the parts of simple mechanism from data and sketches only, while in preparation for a thesis he is made responsible for the entire design and detailed drawings.

DRAWING

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
20	Mechanical Drawing	1	1, 2	2	3	Ashley	C E M Ch
21	Descriptive Geometry	1	2	3	1	Anthony Ashley	C E M Ch
22	* Freehand Drawing	1	1	1	2	Ashley	C E M Ch
23	Technical Sketching	1	2	1	2	Anthony Ashley	C E M Ch
25	Mechanism	2	1	2 1	2 1	Anthony	C E M Ch
26	Elementary Machine Drawing	2	2	3	2	C. H. Chase	E M Ch
27	Advanced Machine Drawing	3	1	2	3	C. H. Chase	M
28	Elementary Machine Design	3	2	1	3	Anthony	E, M
29	Advanced Machine Design	3	1	2	3	Anthony	M

* Not required of students entering College with this subject.

SHOPWORK

Work in the shops is designed to give practical knowledge of mechanical processes and of materials of construction. Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer.

The work in this department maintains a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shops from drawings prepared in the drafting-room.

The course for the Freshman and Sophomore years is required of all engineers; that of the Junior and Senior years is elective, except for students of mechanical engineering, for whom it is required.

A half-year is given to acquiring experience in the use of the ordinary tools in Carpentry (40) and the use of the tools and lathe in Wood Turning. Following this, moulding or foundry work is taken up in preparation for Pattern Making (42) which constitutes the remainder of the Freshman course. Forging (44) gives an intoduction to the work with iron and steel, and shows the different qualities of the material for bending, drawing, forming, and welding. In the Junior year instruction in metal work is continued, with vise and Machine Tools (45).

Project Work (48), which usually carries a design through from the pattern to the finished product, requires experience in pattern-making and machine work, and gives an opportunity for the extension of the subject in machine-shop instruction upon special lines.

SHOPWORK

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
40	Joinery, Wood Turning, Foundry *	1	1	2	3	Stewart	C E M Ch
42	Pattern Making	1	2	1	3	Stewart	C E M Ch
44	Forging	2	2	1	3	Stewart	C E M
45	Chipping and Filing, Machine Tools †	3	2	2	3	C. H. Chase	M
48	Project	4	2	3	3	C. H. Chase	Elective

* Joinery, 8 weeks; Wood Turning, 4 weeks; Foundry, 4 weeks.

† Civil Engineers may elect No. 45 in the first term.

CHEMISTRY

General Inorganic Chemistry (50) is conducted by means of lectures, recitations, and laboratory work. It comprises theoretical descriptive inorganic chemistry, and includes a brief account of the carbon compounds and the principal technical processes.

Qualitative Analysis (52) is conducted also by means of lectures and laboratory work. Students, under direction, perform experiments and develop schemes for the division of the metals into groups, and for the separation and detection of the metals in each group. Reactions are written, and analytical details are discussed. Six known solutions and thirteen unknown are correctly anlayzed.

Qualitative Analysis (53) is taught by lectures and laboratory work. It includes treatment of substances to effect solution, detection of mineral acids, and includes complete analysis of inorganic solids. The work involves the correct analysis of thirteen solid substances.

Quantitative Analysis (61) is mainly taught by laboratory work. The course includes both gravimetric and volumetric methods. The substances analyzed are minerals and salts.

Organic Chemistry (55) is given by lectures and recitations. It may cover the general principles of descriptive and theoretical organic chemistry.

Metallurgy (57) is studied by lectures and recitations relating to the production, properties, and uses of cast iron, wrought iron, and steel.

Assaying (67), mainly laboratory work, is designed to familiarize the student with the practical methods of sampling and assaying gold, silver, and lead ores.

Gas Analysis (63), including a consideration of technical methods, is conducted by means of laboratory work.

Theoretical Chemistry (69), lectures and recitations, treats somewhat in detail the principal theories of chemical science.

Applied Chemistry (65) is taught by lectures and during excursions to chemical plants. The lectures relate to technical applications of inorganic and organic chemistry.

CHEMISTRY

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Preparation Required	Instructor	Course
50	General Chemistry (Chemistry 1)	2	1, 2	2	3		Durkee, Murphy, Smith	C E M Ch
52	Qualitative Analysis (Chemistry 2)	3	1	2	3	50	Murphy	C E M Ch
53	Qualitative Analysis (Chemistry 3)	3	2	2	3	52	Durkee	Ch
55	Organic Chemistry (Chemistry 10)	3	1	3	1	50	Murphy	Ch
57	Metallurgy (Chemistry 8) . . .	3	2	2	1	50	Durkee	Ch
59	Mineralogy . . .	4	1	2	1, 2	53	Richards	Ch
61	Quantitative Analysis (Chemistry 5)	3	2	2	3	50	Durkee	Ch
		4	1, 2	2	3			
63	Gas Analysis (Chemistry 9) . .	4	1	1	2	50	Durkee	Ch
65	Applied Chemistry	4	2	2	1	55	Durkee	Ch
67	Assaying (Chemistry 7)	4	2	2	2	50	Durkee	Ch
69	Theoretical Chemistry (Chemistry 11)	4	2	2	1	50	Murphy	Ch

PHYSICS AND ELECTRICITY

Instruction in Physics (70) is given by lectures fully illustrated by experiment. The aim is to present the science of physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible.

Work in the Physical Laboratory (72) comprises the more important quantitative determinants in mechanics, sound, light and heat, such as the determination of mass, density, elasticity, force of gravity, velocity of sound, pitch, focal length of lenses, index of refraction, wave length of light, candle-power, specific and latent heat, and coefficient of expansion of solids.

Electricity and Magnetism (74) is supplementary to the course in Physics, and affords the requisite preparation for the technical and more advanced courses that follow.

In Electrical Laboratory (73) much attention is given to the Wheatstone bridge and the measurement of resistance. Careful study is made of the condenser and the magnetic properties of iron. The candle-power of incandescent lamps, the determination of the constants of recording watt-meters, and the calibration of ammeters and voltmeters receive the attention their importance demands.

The study of Dynamo-Electric Machinery (77), based upon S. P. Thompson's treatise, is very thorough, and is supplemented by the experimental study of machines in the dynamo room.

Great importance is attached to the class making electrical calculations (76), wherein a considerable number of practical problems are presented to the student for solution. These problems embrace a large part of the domain of direct current work, and include the elementary design of dynamos and motors, and winding-tables for drum armatures.

PHYSICS AND ELECTRICITY

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
70	Physics (Lectures)	1	1, 2	3	1	Dolbear	C E M Ch
72	Physical Laboratory	2	2	1 2	1 3	H. G. Chase Rollins Munro	C E M Ch
73	Electrical Laboratory	3	1 1 2	1 1 1	4 4 3	Hooper Chase Rollins Munro	E M Ch
74	Electricity and Magnetism	3	1	3	1	H. G. Chase	E M Ch
76	Electricity (Problems)	3	2	2	1	Rollins	E
77	Dynamo-Electric Machinery	3	2	3	1	Hooper	E
79	Electrical Laboratory	4	1, 2	2	3	Hooper Rollins Munro	E

PHYSICS AND ELECTRICITY

The study of Alternating Currents (82 and 83) is carried on during the entire Senior year. The subjects of electro-magnetic induction, simple periodic currents, self and mutual induction, transformers, polyphase currents, and induction motors, are successively treated, both descriptively and mathematically. At the same time the study of alternating current machinery is carried on in Electrical Laboratory (79). The rotary converter and the high frequency alternator permit the employment of any periodicity up to over one thousand per second. The employment of such high periodicity greatly facilitates the quantitative study of many alternating current phenomena that are only obscurely exhibited at low frequencies.

Honor students and those electing advanced electrical work read such books as "Alternating Currents," by Bedell and Crehore, "Principles of the Transformer," by Bedell, "Alternating Current Phenomena," by Steinmetz, "Hysteresis in Iron and Other Metals," by Ewing, and have particular investigations assigned them in the laboratory.

In the subject called Electrical Topics (85), each student selects, or has assigned to him, several topics, upon the literature of which he is supposed to inform himself thoroughly, and afterwards to present the fruits of his study in the form of lectures to the class. It is believed that this work will prove of great value in developing the habit of thoughtful reading and in cultivating a just discrimination.

The lectures on the Telegraph and Telephone (87) outline the evolution of these devices and deal comprehensively with the principles involved.

The work in Dynamo Design (88) makes practical application of the principles previously acquired in subject 77. Complete specifications and working drawings of at least one dynamo are prepared by each student.

PHYSICS AND ELECTRICITY

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
82	Alternating Currents	4	1	3	1	Hooper	E
83	Alternating Current Machinery	4	2	3	1	Hooper	E
84	Alternating Currents, Mathematical Treatment	4	1	3	1	Hooper	Elective
85	Electrical Topics	4	2	3	1	Hooper	Elective
86	Magnetism, Theory and Phenomena of .	4	2	3	1	Hooper	Elective
87	Telegraph and Telephone	4	2	1	1	Dolbear	E
88	Dynamo Design	4	1	2	3	Hooper	E

ENGINEERING—CIVIL AND MECHANICAL

Surveying (90, 91) includes principally the elements of general surveying; use in the field of levels, transits, and accessory surveying equipment, intelligible notes, measurement of areas and volumes, location of contours, stadia surveying, miscellaneous field problems, computations, and drawing. Two-thirds of the time is spent in actual field surveying.

Precise Surveying (92) comprises the determination of a true meridian by astronomical and solar observations, accurate base-line measurements, a careful system of triangulation, exact computations, plotting, and brief time for Mining Surveying.—Engineering Jurisprudence (92) comprises the judicial functions of surveyors, ownership of surveys, and law of contracts.

Fire Protective Engineering (93) considers modern slow-burning construction of buildings, systems of fire protection by automatic sprinklers, hydrants, pumps, and city water supplies, the occupancy, general order, and neatness of industrial plants. Two or more visits are made to near-by plants. —Hydrographic Surveying (93) includes the measurement of flow of water and computation of horse-power available, together with a stadia and plane table survey of the river banks.

Railroad Surveying (94) includes the field operations required for the preliminary survey, location of curves, turn-outs, switches, and various structures, together with office work based upon the data obtained in the field.

Railroad Engineering (95) is pursued in the recitation and drafting rooms, and is taught by text-books and lectures. It includes the study of various curves, switches, and frogs; and takes up such subjects as track work, structures, yards, and methods of making estimates.

Railroads—Economic Location (96) embraces the theory of the location and operation of railroads, and is carried on by recitations, lectures, and review of special examples. Careful study is made of location as influenced by train resistance, traffic, motive-power, cost of construction, and operating expenses, the intention being to give the student comprehensive engineering knowledge of railroad transportation.

ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
90	Surveying	2	1	2	3	Sanborn, Rockwell, Tucker	C E M Ch
91	Surveying	2	2	2	3	Sanborn, Rockwell, Tucker	C
92	Precise Surveying and Engineering Jurisprudence	3	1	2	3	Sanborn	C
93	Fire Protective Engineering and Hydrographic Surveying	3	2	2	3	Sanborn	C
94	Railroad Surveying	4	1	2	3	Bray	C
95	Railroad Engineering	4	1	3	1	Bray	C
96	Railroads—Economic Locations	4	2	3	1	Bray	Elective

ENGINEERING—CIVIL AND MECHANICAL

Roofs and Bridges (97) is a study of analytical and graphical methods of obtaining the stresses in the modern forms of simple roof and bridge trusses. The comparative merits and economy of the different kinds of trusses are discussed.

Bridge Design (98) is a course in the design of framed structures of wood and steel and includes actual proportioning of parts, and preparation of detailed drawings.

Highways (99) considers the location and construction of roads and streets; physical properties of earth, stone, and pavements; economy of traction, grades, construction, and maintenance.

Sanitary Engineering (109) comprises a brief study of elements that concern the health of a community: sanitary science, water and its purification, water supply, disposal of sewage and garbage. Well-kept notes are required, and include reports of researches in engineering magazines and books, accounts of visits to laboratories, water works, and sewerage plants.

Hydraulics (110), theoretical and applied, includes the laws relating to the pressure and flow of water in pipes, discharge over weirs and through tubes and conduits, and embraces the measurement and development of water power and the construction of water wheels.

Masonry (111) embodies a consideration of materials, the methods of their preparation and use as applied to foundations, arches, bridges, and buildings. It is taught by lectures, textbooks, and inspection of work in process of construction.

Pure Mechanics (112) treats of the principles of force, motion and work. Care is taken to present problems, about two hundred in number, that will emphasize fundamental principles and be of service in subsequent studies or engineering practice.

Applied Mechanics (113) is a continuation of 112. Particular attention is given to the strength of materials and of structures. Throughout the work numerous practical problems illustrate the principles considered.

Applied Mechanics (114) is an advanced subject open only to students who have passed satisfactorily in the required mechanics (112 and 113).

ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
97	Roofs and Bridges	4	1	3	1	Rockwell	C
98	Bridge Design	4	2	2	3	Rockwell	Elective
99	Highways	4	1	2	1	Tucker	Elective
109	* Sanitary Engineering	3, 4	2	3	1	Sanborn	C
110	Hydraulics	4	2	3	1	Sanborn	C E M Ch
111	* Masonry	3, 4	2	3	1	Bray	C
112	Pure Mechanics	3	1	3	1	Sanborn	C E M Ch
113	Applied Mechanics	3	2	3	1	Bray	C E M Ch
114	Applied Mechanics	4	1	3	1	Bray	Elective

* Subjects 109 and 111 are given in alternate years. 111 will not be given in 1904-1905.

ENGINEERING—CIVIL AND MECHANICAL

In Experimental Mechanics (115, 116) problems are set that require for analysis personal experimentation and correct application of the principles of pure and applied mechanics. Action of forces in wood and metals is observed, and illustrative tests are made with laboratory apparatus.

Structural Design (117) is an introduction to the subject of design of structures. Simple problems in foundations, wooden roof framing, and riveted connections are thoroughly discussed in class, after which the students make the necessary computations and drawings.

Structural Design (118) is an advanced course in continuation of 117. It is essentially a course in the engineering details of building design,

In Steam Engine (120) the study of the fundamental principles involved in the generation of steam is followed by their application to engine details, valve gears, and the valve diagram. The theory of the indicator is taught, and applied to the making of simple tests.

Steam Engineering (121) includes the thermo-dynamics of the steam engine and other heat engines, together with the study of various types of valve gears.

Steam Engineering (122) includes problems relating to the design and construction of steam engines, involving the strength and proportion of parts, the consideration of multiple-expansion engines, and steam boilers.

Engineering Laboratory (123) includes the adjustment, use, and test of indicators, gauges, and calorimeters; the measurement of power by brakes and dynamometer, and tests of steam and gas engines, and boilers.

Thesis (135). The thesis prepared by each candidate for a degree in engineering requires at least one hundred and twenty hours of preparation. A single topic that has interested the student is developed by extended personal research, design, or experimentation.

ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
115	Experimental Mechanics	3	1	1	3	Sanborn, Rockwell	C E M Ch
116	Experimental Mechanics	3	2	1	2	Bray, Sanborn	M
117	Structural Design	3	2	2	3	Rockwell	C
118	Structural Design	4	1	2	3	Rockwell	Elective
120	Steam Engine	3	1	3	1	C. H. Chase	C E M Ch
121	Steam Engineering	3	2	3	1	Bray	M
122	Steam Engineering	4	1	3	1	Bray, C. H. Chase	M
123	Engineering Laboratory	4	1, 2	2	3	Bray, C. H. Chase	M
135	Thesis	4	2	2	4		C E M Ch

ENGLISH

English is required throughout the Freshman and Sophomore years, the aim being to help the student (1) in developing the power of thinking for himself and expressing his thoughts accurately, clearly, and interestingly; (2) in getting some acquaintance with the best English literature, including the literature of science.

English 140 is a general introduction, English 141 a study of expression, English 142 a brief historical survey of English literature, and English 143 a study of technical and scientific writing. In English 144 and 145 the work consists in writing theses in conference with the instructor, the subjects of the theses being determined by the needs of the individual student.

Each of the required subjects is presented by lectures and weekly or bi-weekly conferences, and in each subject the work required of the student includes both reading and writing. Written work in other subjects will also be examined by the English department, as a test of the student's ability to express himself clearly and correctly; and theses, as far as possible, will be subject to criticism by the department of English before they are finally accepted by the department for which they are written.

English 144, 145, and the following subjects given in the College of Letters are approved electives for the Junior year.

English 5 (146) is Argumentative Composition, a study of its requirements as observed by successful writers, with constant practice by the student. The written work consists of two themes or their equivalent each week.

English 10 (151). The English Bible.

English 12 (152). American Literature. Lectures, reading, brief critical essays.

English 17 (153). Shakespeare. Lectures, reading, quizzes.

English 18 (154). Shakespeare. Lectures, reading, brief critical essays.

ENGLISH

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
140	English	1	1	2	1	Earle	C E M Ch
141	English	1	2	3	1	Whittemore	C E M Ch
142	English	2	1	3	1	Earle	C E M Ch
143	English	2	2	1	1	Earle	C E M Ch
144	English		1			Earle	Elective
145	English		2			Earle	Elective
146	English 5		1	1	1	Shipman	Elective
151	English 10		1, 2	3	1	Whittemore	Elective
152	English 12		1, 2	3	1	Maulsby	Elective
153	English 17		1	3	1	Maulsby	Elective
154	English 18		2	3	1	Whittemore	Elective

MODERN LANGUAGES

For admission to the Engineering Department, an elementary knowledge of French or German (see pages 42, 43,) is required. Students failing to receive credit for this may enter French 160. Those who have fulfilled the conditions stated on page 46, 47, will be given advanced credit, but advanced credit for a language not continued in College, or credit for more than three years' work, will be given only on examination.

The work required of candidates for the degree of S.B. in Engineering is as follows:

1. Those having fulfilled the regular entrance requirements will continue the language offered during the Freshman and Sophomore years.
2. Those having received credit for both languages may pursue either language for two years or each for one year.
3. Those having received advanced credit in one will study the alternative language for two years.
4. Those having received advanced credit in both will be required to take only one year of language in College.

Those in class 2 who receive grade B in each language, and those in 3 or 4 who take an advanced subject in French or German and receive grade B may count one subject (six term-hours) also as an elective.

Electives for those who have completed the requirements in French are provided by two half-year subjects. French 163 will include some scientific reading, modern fiction, and drama; French 164 deals with authors and works of the 19th century.

POLITICAL ECONOMY

Political Economy 180, designed especially for students of engineering, aims at a systematic and comprehensive study of the elements of economics, and comprises a study of some of the more important problems of modern industrial society.

PHYSICAL TRAINING

The aim of the department is to secure a more symmetrical development of the body, and a fuller appreciation of the value of systematic exercise. Special work is prescribed for each student, depending on his physical condition, and work is also conducted in classes.

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
	MODERN LANGUAGES						
160	French, Elementary		1, 2	5	1	Earle	
161	French, Intermediate	1	1, 2	3	1	Hayden	C E M Ch
162	French, Advanced	2	1, 2	3	1	Hayden	C E M Ch
163	French, Advanced	3	1	3	1	Hayden	Elective
164	French, Advanced	3	2	3	1	Hayden	Elective
165	German, Elementary		1, 2	3	1	Reed	
166	German, Intermediate	1	1, 2	3	1	Reed	C E M Ch
167	German, Advanced	2	1, 2	3	1	Fay	C E M Ch
	OTHER SUBJECTS						
180	Political Economy	4	1	3	1	Metcalf	C E M Ch
185	Physical Training	1, 2	1, 2†	3	1	Stroud	C E M Ch

† From the middle of November to the middle of March.

TABULAR PROGRAM, FIRST HALF-YEAR

The prefixed *a*, *b*, *c*, signify divisions

MONDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR	PlEc 180	ApMch 114	StEn 122	RfBr 97	EnLb 123 Chm 61
JUNIOR	Cal 8	Chm 55 Frn 163	StEn 120	ElMg 74	*a*PSv 92 *b*ElLb 73 *2 to 6* Chm 61
SOPH	Eng 142	*a*Sv 90	*a*Sv 90	*a*Sv 90	*c*Sv 90
FRESH	*a*Tr 3 *c*Frn 161 Ger 166 AlgB-P	*b*Tr 3 *a*Frn 161 Ger 165 Frn 160	Phs 70	*c*Tr 3 *b*Frn 161	*c*Dwg 20 *b*Sh 40

WEDNESDAY

SENIOR	PlEc 180	ApMch 114	StEn 122	RfBr 97	MDn 29 StDn 118
JUNIOR	Cal 8	Chm 55 Frn 163	StEn 120	ElMg 74	MDwg 27
SOPH	Eng 142	*a*Sv 90	*a*Sv 90	*a*Sv 90	Chm 50
FRESH	*a*Alg 1 *c*Frn 161 Ger 166 AlgB-P	*b*Alg 1 *a*Frn 161 Ger 165 Frn 160	Phs 70	*c*Alg 1 *b*Frn 161	*c*Dwg 20 *b*Sh 40

FRIDAY

SENIOR	PlEc 180	ApMch 114	StEn 122	RfBr 97	MDn 29 StDn 118 Chm 61
JUNIOR	MDwg 27	MDwg 27 Frn 163	StEn 120	ElMg 74	*a*PSv 92 *a*ElLb 73 *2 to 6* Chm 61
SOPH	Eng 142	*c*Sv 90	*c*Sv 90	*c*Sv 90	Chm 50
FRESH	*a*Tr 3 *c*Frn 161 Ger 166 Alg B-P	*b*Tr 3 *a*Frn 161 Ger 165 Frn 160	Phs 70	*c*Tr 3 *b*Frn 161	*b*Dwg 20 *a*Sh 40 *2 to 6*

TABULAR PROGRAM, FIRST HALF-YEAR

The prefixed *a*, *b*, *c*, signify divisions

TUESDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR	El 82 REn 95	ElLb 79	ElLb 79	ElLb 79 Hghs 99	DyDn 88
JUNIOR	Mch 112	*b*PSv 92 MSh 45	*b*PSv 92 MSh 45	*b*PSv 92 MSh 45	Chm 52
SOPH	*b*Cal 7 *a*Frn 162 Ger 167	*a*Cal 7 *b*Frn 162	*a*Mchm 25 *b*Mchm 25	*a*Mchm 25 *b*Mchm 25	*b*Sv 90
FRESH	Eng 140	*b*Alg 1 Frn 160	*a*Alg 1 *b*Dwg 20 GmB-P	*c*Alg 1 *b*Dwg 20	*a*Dwg 20 *c*Sh 40

THURSDAY

SENIOR	El 82 REn 95	ElLb 79 RSv 94	ElLb 79 RSv 94	ElLb 79 RSv 94	DyDn 88 RSv 94
JUNIOR	Mch 112	*b*ExMch 115 MSh 45	*b*ExMch 115 MSh 45	*b*ExMch 115 MSh 45	Chm 52
SOPH	*b*Cal 7 *a*Frn 162 Ger 167	*a*Cal 7 *b*Frn 162	*a*Mchm 25 *b*Mchm 25	*a*Mchm 25 *b*Mchm 25	*b*Sv 90
FRESH	Eng 140	*a*Alg 1 Frn 160	*b*Alg 1 *a*Sh 40 GmB-P	*c*Alg 1 *a*Sh 40	*a*Dwg 20 *c*Sh 40

SATURDAY

SENIOR	El 82 REn 95	EnLb 123	EnLb 123	EnLb 123 Hghs 99	
JUNIOR	Mch 112	*b*PSv 92 *a*ExMch 115	*b*PSv 92 *a*ExMch 115	*b*PSv 92 *a*ExMch 115	
SOPH	*b*Cal 7 *a*Frn 162 Ger 167	*a*Cal 7 *b*Frn 162	*a*Mchm 25 *b*Mchm 25	*a*Mchm 25 *b*Mchm 25	
FRESH	*b*FDwg 22 B-P Eng	*b*Alg 1 *b*FDwg 22	*a*Alg 1 *a*FDwg 22 GmB-P	*c*Alg 1 *a*FDwg 22	

TABULAR PROGRAM, SECOND HALF-YEAR

The prefixed *a*, *b*, *c*, signify divisions

MONDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR	SyEn 109	El 83 EnLb 123	ElTp 85 EnLb 123	EnLb 123	Hyd 110 Chm 61
JUNIOR	SyEn 109	ApMch 113	*a*ExMch 116 *b*MDn 28	*a*ExMch 116 *b*MDn 28	*b*ElLb 73 *2 to 6* *a*MSh 45
SOPH	*a*Eng 143	*a*Sv 91 *c*FSh 44 *b*PhsLb 72	*a*Sv 91 *c*FSh 44 *b*PhsLb 72	*a*Sv 91 *c*FSh 44 *b*PhsLb 72	*c*Sv 91 *b*FSh 44
FRESH	*a*Anlt 5 *c*Frn 161 Ger 166 AlgB-P	*b*Anlt 5 *a*Frn 161 Ger 165 Frn 160	Phs 70	*c*Anlt 5 *b*Frn 161	*c*Dwg 20 *a*TcSk 23 *2 to 4*

WEDNESDAY

SENIOR	SyEn 109	El 83	ElTp 85		Ths 135
JUNIOR	SyEn 109	ApMch 113	*b*ExMch 116 Chm 57 *a*MDn 28	*b*ExMch 116 *a*MDn 28	StDn 117 *a*,*b*ElLb 73
SOPH	*a*,*b*,*c*PhsLb 72	*a*Sv 91 *b*PhsLb 72	*a*Sv 91 *b*PhsLb 72	*a*Sv 91 *b*PhsLb 72	Chm 50
FRESH	*a*Anlt 5 *c*Frn 161 Ger 166 Alg B-P	*b*Anlt 5 *a*Frn 161 Ger 165 Frn 160	Phs 70	*c*Anlt 5 *b*Frn 161	*c*Dwg 20 *a*PSh 42

FRIDAY

SENIOR	SyEn 109	El 83 EnLb 123	ElTp 85 EnLb 123	EnLb 123	Chm 61
JUNIOR	SyEn 109	ApMch 113	DfEq 9 Chm 57	*a*,*b*MDn 28	StDn 117 *a*ElLb 73 *2 to 6* *a*MSh 45
SOPH	*b*Eng 143	*c*Sv 91 *a*FSh 44	*c*Sv 91 *a*FSh44	*c*Sv 91 *a*FSh 44	Chm 50
FRESH	*a*Anlt 5 *c*Frn 161 Ger 166 Alg B-P	*b*Anlt 5 *a*Frn 161 Ger 165 Frn 160	Phs 70	*c*Anlt 5 *b*Frn 161	*b*TcSk 23 *2 to 4*

TABULAR PROGRAM, SECOND HALF-YEAR

The prefixed *a*, *b*, *c*, signify divisions

TUESDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR	Hyd 110	REn 96	ElLb 79	ElLb 79	BrDn 98 Chm 67
JUNIOR	StEn 121	DEM 77	DfEq 9	Frn 164	HSv 93 Chm 53 *b*MSh 45
SOPH	*b*Cal 7 *a*Frn 162 Ger 167	*a*Cal 7 *b*Frn 162	MDwg 26	MDwg 26	*b*Sv 91 *a*,*c*PhsLb 72
FRESH	Eng 141	GmB-P	*a*DsGm 21 *b*DsGm 21	*a*DsGm 21 *b*DsGm 21	*a*Dwg 20 *c*PSh 42

THURSDAY

SENIOR	Hyd 110	REn 96	ElLb 79	ElLb 79	BrDn 98 Chm 67
JUNIOR	StEn 121	DEM 77	LSq 11 ElPb 76	Frn 164	HSv 93 Chm 53 *b*MSh 45
SOPH	*b*Cal 7 *a*Frn 162 Ger 167	*a*Cal 7 *b*Frn 162	MDwg 26	MDwg 26	*b*Sv 91 *a*,*c*PhsLb 72
FRESH	Eng 141	Frn 160	*a*DsGm 21 *b*DsGm 21	*a*DsGm 21 *b*DsGm 21	*a*Dwg 20 *b*PSh 42

SATURDAY

SENIOR	Ths 135	REn 96 Ths 135	ElLb 79 Ths 135	ElLb 79 Ths 135	
JUNIOR	StEn 121	DEM 77	LSq 11 ElPb 76	Frn 164	
SOPH	*b*Cal 7 *a*Frn 162 Ger 167	*a*Cal 7 *b*Frn 162	MDwg 26	MDwg 26	
FRESH	Eng 141	GmB-P	*a*DsGm 21 *b*DsGm 21	*a*DsGm 21 *b*Ds Gm 21	

THE GRADUATE DEPARTMENT

Faculty of the Graduate Department

ELMER H. CAPEN, A.M., D.D., LL.D., PRESIDENT

J. STERLING KINGSLEY, SC.D., DEAN
Professor of Biology

HARRY G. CHASE, B.S., SECRETARY

CHARLES E. FAY, LITT.D.
Wade Professor of Modern Languages

ARTHUR MICHAEL, A.M., PH.D.
Professor of Chemistry

WILLIAM L. HOOPER, A.M., PH.D.
Professor of Electrical Engineering

ARTHUR E. AUSTIN, A.B., M.D.
Professor of Medical Chemistry

DAVID L. MAULSBY, A.M.
Professor of English Literature

GEORGE VAN NESS DEARBORN, A.M., PH.D., M.D.
Assistant Professor of Physiology

WILLIAM K. DENISON, A.M.
Professor of the Latin Language and Literature

LAWRENCE B. EVANS, PH.D.
Professor of History

HENRY C. METCALF, PH.D.
Jackson Professor of Political Science

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

FRANK G. WREN
Walker Professor of Mathematics

STANDING COMMITTEES OF THE GRADUATE DEPARTMENT

EXECUTIVE: Professor Kingsley, *Chairman*; Professors Hooper and Denison.

REQUIREMENTS FOR DEGREES: Professor Kingsley, *Chairman*; Professors Evans and Michael.

The Graduate Department

INSTRUCTION

Graduate instruction is given by members of the General Faculty. The advanced elective work offered to undergraduates in any department of the College of Letters is open to graduate students, and will count for the degree of Master of Arts, on condition that it be not counted for any other degree. Additional courses still more advanced may be arranged with the instructor in whose department the work is to be done.

DEGREES

The degrees offered are Master of Arts, Master of Science, and Doctor of Philosophy. Departments at present open to candidates for the degree of Master of Arts are:—

English,	Mathematics,
Modern Languages,	Chemistry,
Ancient Languages,	Physiological Chemistry,
History and Public Law,	Biology,
Political Science,	Physiology,
	Electricity.

The degree of Doctor of Philosophy is offered in Chemistry, in Biology, and in History and Public Law.

The degree of Master of Science is offered in Biology, in Chemistry, and in Engineering.

The Degree of Master of Arts will be conferred upon graduates of Tufts College who have received the degree of Bachelor of Arts, or upon graduates of other colleges whose course of study has been equivalent to that required at Tufts College for the degree of Bachelor of Arts, upon the following conditions:—

1. They shall have completed an approved course of advanced study, including the equivalent of at least thirty term hours, in one or at the most two departments. If two departments are chosen they should be allied, and should occupy the relation of major and subsidiary department.

2. This course shall be pursued during a residence of not less than one year. The condition of residence may be waived by special permission, but in this case the degree cannot be taken with less than two years of graduate study.

3. The candidate shall prepare a thesis and pass a satisfactory examination before a board of three examiners, appointed by the Graduate Faculty at its May meeting. The thesis must be presented at least one month before Commencement.

4. No subject counted for the first degree will be counted for the second degree.

5. Students taking the degree at the end of a four years' course of study must have complied with the requirement as to standing governing those who receive the degree of A.B. at the end of three years; that is, an average standing of Grade B, or higher, must have been attained on the entire work of the course.

6. Candidates for this degree must make a written application to the Graduate Faculty before October 1 of the college year in which the degree is to be conferred, and if the degree is not taken after one year of study they must also give a second notice three months before receiving the degree.

Graduates of Tufts College who have taken the degree of Bachelor of Philosophy, or graduates of other colleges holding a degree of similiar grade, must complete the requirement for the degree of Bachelor of Arts before they can be entered as students in courses leading to the degree of Master of Arts.

THE DEGREE OF MASTER OF SCIENCE will be conferred upon Bachelors of Science who shall satisfactorily pursue advanced professional study at Tufts College for one year, under the conditions required of candidates for the degree of Master of Arts; or who shall present suitable evidence of three years of professional work, one year of which must be in a position of responsibility, in which case a certain amount of professional study will be assumed. A thesis based upon this study will be required.

THE DEGREE OF DOCTOR OF PHILOSOPHY will be conferred upon Bachelors of Arts, Philosophy, or Science who shall have completed at least three years of graduate study, two years of which must be in residence, subject to certain conditions, which are enumerated below (pages 160, 161) in connection with the

several departments. This degree will not be conferred simply on the ground of the completion of the required course of study. High attainment is necessary, and especially the power of original thought and independent investigation.

The whole course of study must be devoted to one subject, and a thesis must be presented giving evidence of original research. Other special requirements may be made by the instructors in charge of the work of the candidates. Each candidate must pass a satisfactory examination before a board of three examiners appointed by the Graduate Faculty.

The thesis must be ready at least one month before Commencement, at which time the student must make written application to the Secretary to be considered as an applicant for the degree.

THE DEGREE OF MASTER OF ARTS may be taken by candidates for the degree of Doctor of Philosophy at the end of their first year of study, or it will be conferred together with the latter degree.

DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF MASTER OF ARTS

ENGLISH.—It is assumed that candidates for the degree of Master of Arts in English will have already laid a good foundation in English composition and the history of English literature. The amount of work expected is roughly indicated by that required of a major student in English at this College. When not anticipated in undergraduate work, the subjects numbered 7*, 10, 17, 18, 19, 20, 23, 25, 26, and 28, may be counted towards the Master's degree, provided that the work done distinctly surpasses in quality that required of undergraduates. On the other hand, a part of the work or the entire work for the advanced degree may consist of a special course of study, undertaken under the direction of the department. Such special work must be of creative or investigative order. It may take the form of discussion of some question in literary history or literary criticism. It may consist of the intensive study of an

* See "Departments of Instruction," pages 58 to 60.

author or a period. Frequently the use of German and French is necessary.

MODERN LANGUAGES.—The extended undergraduate courses offered in Modern Languages enable the candidate for the degree of Bachelor of Arts who specializes in this department to cover the work formerly required for the Master's degree. For those who have not taken the more advanced subjects, the department offers a full graduate course leading to the degree of Master of Arts. The work is performed in existing undergraduate classes. To enter upon this course, the candidate must have completed the equivalent of six of the Modern Language subjects, including 1 and 3 * in both German and French. Of elementary subjects only Italian may be taken, by such as have had the equivalent of two years of French. Graduate students whose special work is being performed in other departments are admitted to such classes in German and French, beyond subject 1, as their proficiency will warrant.

ANCIENT LANGUAGES. — Candidates for the degree of Master of Arts in Greek or Latin must have completed, for Greek, courses 1, 2, 3, and 4 or 5; for Latin, courses 1, 2, 3 or 4, and 5, or equivalents.† It is desirable that candidates for this degree in either of the ancient languages present the other as a minor subject. Exceptional cases will be treated in accordance with the varying circumstances. Greek 4, 5, 7, 8, and 9, Latin 3, 4, 6, 7, 8, 9, 10, and Classical Archæology 1, 2, 3, 4, 5, and 6, so far as these have not been anticipated as undergraduate work, may be counted towards the Master's degree. Graduate students will be expected to do work of an advanced character, either in classes with undergraduates or on special lines of investigation assigned by the instructors. The required thesis, on an approved topic, must embody the results of the investigation of some author or period or of some philological or archaeological subject. A reading knowledge of French and German is indispensable.

* See "Departments of Instruction," pages 61 to 64.

† See "Department of Instruction," pages 64 to 68.

HISTORY AND PUBLIC LAW.—Before beginning graduate work in History and Public Law every student must have completed History 1 and 2, or their equivalent.* The advanced subjects enumerated in the catalogue, in so far as they are suited to the needs of the candidate, may be offered for the higher degrees, but it is expected that much of the candidate's work will consist of special work pursued under the direction of the department.

For the degree of Master of Arts, a working knowledge of French is essential. A similar knowledge of German is desirable, and in some cases may be necessary. In addition to the subjects required for the degree candidates will be expected to do something in the way of an independent investigation of a definite subject, the result to be embodied in a thesis.

POLITICAL SCIENCE.—The degree of Master of Arts in Political Science is conferred on graduates of Tufts College who pursue successfully one year of resident graduate study. Bachelors of Arts of other colleges must satisfy the department that they are qualified by previous training to enter upon the desired course of study, and show the results of a year's resident graduate work with high credit. A good reading knowledge of French and German is desirable, and may in certain lines of work be necessary. Before receiving the degree all candidates are expected to sustain a final oral examination, and give evidence by a thesis of their ability to do work of the investigative order. In addition to the regular advanced work offered by the department, special subjects giving opportunity for original investigation will be outlined for candidates wishing to pursue them.

MATHEMATICS.—Graduate students in Mathematics must have acquired a working knowledge of the calculus, and may offer as part of their work for the Master's degree any of the subjects given by the department except the first six, but subjects 7, 9, and 10, or their equivalents, must be included.† Candi-

* See "Departments of Instruction," pages 73, 74.

† See "Departments of Instruction," page 79.

dates will hold themselves in readiness to be examined at the end of their studies upon any topics treated in subjects 3 to 6 inclusive, as well as upon work offered for the degree.

CHEMISTRY.—The requirements for beginning graduate work in Chemistry are the completion of two years' work in General Chemistry, Basic and Acid Qualitative Analysis, and the outlines of Organic Chemistry (subjects 1, 2, 3, and 10 of Tufts College, or their equivalent).*

To obtain the degree of Master of Arts the applicant must have done satisfactory work in at least five of the subjects, numbered 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, and 15, and must also present a satisfactory thesis and pass a satisfactory examination in all the subjects studied.

PHYSIOLOGICAL CHEMISTRY. — The work in Physiological Chemistry requires in preparation a thorough foundation in inorganic and organic chemistry, including qualitative and quantitative analysis; the ability to read scientific French and German readily; and a thorough knowledge of the elements of physics, particularly with reference to the laws of the density of gases and fluids under heat and pressure, as well as such acquaintance with optics as will enable one to use intelligently the polariscope, the spectroscope, and the microscope.

The course is one of laboratory work wholly, under the personal advice and assistance of the instructor, and must include one original investigation, to require not less than one half-year, and to be accompanied by a satisfactory thesis upon the results of such research, The subject of this investigation may be taken from the realm of enzymes, metabolism, or hygiene. A rigid examination will also be demanded upon the principles of physiological chemistry.

PHYSIOLOGY.—Before beginning graduate work in Physiology the candidate for the degree of Master of Arts must have had at least a year's training in biology, and, besides, a knowledge of the outlines of anatomy and physiology such as may be obtained from such works as Martin's Human Body, with

* See "Departments of Instruction," pages 83, 84.

simple laboratory experiments. A reading knowledge of French and German is desirable, and in some cases may be necessary. The work of the year is largely practical. It involves the completion of the work in physiology required of candidates for the degree of Doctor of Medicine, and, in addition, the investigation of some simple problem which shall serve as the basis of the required thesis.

BIOLOGY.—Before beginning graduate work in Biology the student must have a good knowledge of the elements of vertebrate and invertebrate anatomy and of physiology (courses 1 to 4 of Tufts College, or their equivalent), and must be able to use French and German.* The work offered for advanced degrees is in the lines of comparative anatomy and of the histology and embryology of animals. Consequently the greatest stress will be laid upon laboratory work, but students may also take the subjects numbered 5, 6, 8, and 9.

For the degree of Master of Arts or Master of Science the student must pass a satisfactory examination in the principles of morphology, and present an acceptable thesis embodying the result of research.

ELECTRICITY.—As a preparation for graduate work in Electricity the candidate must have a thorough mathematical foundation, including differential equations, and a good knowledge of physics, including elementary electrical tests (Physics 1 to 5 † of Tufts College, or an equivalent). Unless these requirements be met upon beginning graduate work, it will scarcely be possible to obtain the master's degree in one year.

The graduate work will include the satisfactory completion of subjects 1, 2, 3, 4, 5, and 8,† and the preparation of an acceptable thesis involving original research.

* See "Departments of Instruction," page 85.

† See "Departments of Instruction," pages 80, 81, 91.

DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

CHEMISTRY.—To obtain the degree of Doctor of Philosophy the candidate must have at the beginning a good working knowledge of German. He must (unless previously qualified) take subjects 4 to 7, 9 to 15, and 17, and devote at least a year to subject 16.* Examinations in the above subjects must be satisfactorily passed, and an acceptable thesis, embodying an original investigation in Chemistry, must be presented.

BIOLOGY.—Candidates must have a good working knowledge of French and German before beginning their work; they must carry on research in animal morphology for at least three years, two of which must be in residence. They must also have passed one summer at some sea-shore biological station. They must pass an examination on general zoology, embracing not only the fundamental facts of morphology and classification, but the more prominent philosophical views as well. Each candidate must present an acceptable thesis embodying original research, with an adequate discussion of the bearings of the facts discovered, and the views of previous writers on the same subject.

HISTORY AND PUBLIC LAW.—Every candidate for the degree of Doctor of Philosophy in History and Public Law will be expected to possess a working knowledge of French and German. Before beginning his graduate work, he should have completed History 1, 2, and 3, and Public Law 1.† For the attainment of the degree he is expected to show

(1) A general knowledge of the whole field of mediaeval and modern history. This knowledge is expected to involve a comprehension of the significance of events and institutions rather than a familiarity with details.

(2) An intimate acquaintance with the history of a limited period. Here the candidate is expected to have a detailed knowledge of the events and institutions of the period selected, together with a critical knowledge of the literature bearing upon it.

(3) A critical knowledge of the leading writers upon mediaeval and modern history.

* See "Departments of Instruction," pages 83, 84.

† See "Departments of Instruction," pages 73 to 75.

(4) Power of research, as evidenced by the preparation of a thesis. The thesis must be exhaustive, must constitute a contribution to the field of human knowledge, and must be in a form suitable for publication. The preparation of the thesis will require the greater part of the candidate's time for one year.

Due credit will be allowed for graduate work done in other institutions.

FELLOWSHIPS

THE OLMSTEAD AND MINER FELLOWSHIPS IN NATURAL HISTORY.—In accordance with the spirit of the gift of the late Charles Hyde Olmstead, of Hartford, Conn., the Trustees have established two fellowships in Natural History, to be known respectively as the Olmstead and the Miner Fellowship. The income of these fellowships, amounting to two hundred and fifty dollars annually each, is awarded by the Trustees to graduate students in Natural History, upon recommendation of the Administrative Board. The conditions of the fellowships are as follows:—

(1) The application must be made in writing before May 1, addressed to the President of the College. It must contain evidence of a liberal education, and of ability to profit by the work to be done, as well as testimonials of good character from instructors or others. Any original article, either written or printed, is an aid in ascertaining the attainments of the candidate.

(2) The holder of the fellowship will be expected to devote himself to the prosecution of some special subject, under the direction of the professor in charge of the department of Natural History. He may be called upon for minor services, such as conducting examinations, but he shall not be called upon to teach. He may, however, at his own option, and with the approval of the President, give instruction by lectures or otherwise to persons connected with the College, but not elsewhere.

(3) The payments will be made half in January and half in June; but, in case of resignation or removal from the fellowship, payment will be made only for the time it is actually held. The holder of the fellowship is not exempt from the payment of tuition.

(4) Residence is a condition of holding either of these fellowships.

The holder of a fellowship may be eligible to a single re-election, but incumbency constitutes no claim to re-appointment.

SCHOLARSHIPS

The Trustees of Tufts College have established eleven scholarships, one in each department offering graduate work. Each scholarship gives free tuition to the incumbent, who is expected to devote himself exclusively to advanced study.

These scholarships are awarded by the Graduate Faculty, on recommendation of the heads of departments concerned, at or before the beginning of the year in which they are to be conferred. Applications must be made to the President on or before May 1 of the preceding year, and will regularly be acted upon at the June meeting of the Graduate Faculty.

TUITION

The tuition fee for the whole course for the degree of Master of Arts, or Master of Science, is *one hundred dollars*, of which *fifty dollars* is payable in advance.

The tuition fee for candidates for the degree of Doctor of Philosophy is *one hundred dollars* for each year spent at the College, of which *fifty dollars* is payable in advance each year.

The requirement of bonds stated in this catalogue, under "Expenses," applies to all students of the College, graduate as well as undergraduate.

Buildings and Equipment

The College buildings are seventeen in number. Ballou Hall contains recitation-rooms, the room of the President and Faculty, and the offices of the Dean, the Registrar, and the Bursar. It contains also the college bookstore. Other buildings are Barnum Museum; Goddard Chapel; Goddard Gymnasium; the Library; the Chemical Building; three dormitories,—East Hall, West Hall, Dean Hall, for men; Curtis Hall, containing the commons dining-hall, the post-office, and rooms for students; Metcalf Hall and the Start House, for women students. The Bromfield-Pearson School building is available for technical courses of the College. Two buildings, Miner Hall and Paige Hall, are devoted to the use of the Divinity School. A new building, Robinson Hall, provides for work in certain of the physical sciences. A power-house has been added, supplying light, heat, and power to the engineering buildings.

The dormitories are open for the use of students from seven days before the beginning of the first half-year until seven days after Commencement. In the summer the gates in the wire fence surrounding the buildings are closed at 5 P.M. on week days and all day Sunday. The Chapel is open in the summer for the inspection of visitors from 9.30 A.M. to 4.00 P.M.

LIBRARY

The library contains about fifty-two thousand six hundred bound volumes and thirty-five thousand pamphlets. The College regularly receives more than two hundred periodicals. By favor of the late Senator Hoar the library is a depository for government publications. In the library building a reading-room maintained by the students, supplies the daily and weekly papers. Separate rooms have been provided with facilities for the use of students working in the departments of History, the

Ancient Languages, Music, English, and Political Science. The average annual increase by donation and purchase, for the last five years, has been about three thousand volumes. The last year has been exceptional in the number and value of the books received — more than forty-five hundred volumes having come from several important sources. The library is open to all members of the College every day in the week, except Sunday, from 8.15 A.M. to 12.45 P.M., and from 2 to 5 P.M.

In addition to the general library, there is in Miner Hall the collection of the Universalist Historical Society (fifty-five hundred volumes and several thousand pamphlets), to which, on application, students have free access; in the Barnum Museum is the department library of Natural History, numbering over two thousand volumes and more than fifty-one hundred pamphlets; and, besides the full collection of English works relating to music in the library proper, there is, in connection with the music-rooms in Goddard Gymnasium, the Metcalf musical library of sixteen hundred volumes. There are altogether about sixty-five thousand bound volumes available for use.

BARNUM MUSEUM

The Barnum Museum of Natural History was built in 1883-84 by the late Phineas T. Barnum, who gave the College a fund for its maintenance and for the addition of two wings to the central building. One of these wings has been erected. In addition to laboratory rooms, it affords space for the display of the mineralogical and geological collections.

The College is also indebted to Mr. Barnum for the larger portion of its zoological collection. This serves to illustrate all groups of the animal kingdom, and is especially rich in skeletons and mounted skins of mammals, the whole being well adapted for the purposes of instruction. The botanical collection consists of an herbarium containing a representation of the flora of New England, besides many specimens from Europe and the southern and western states. The geological collection contains representatives of the various types of rocks, as

well as of fossils from all formations. The mineralogical collection embraces fine examples of most of the species.

The laboratories and lecture-rooms of the department of Geology are in the main Museum building. The geological laboratory is provided with petrological microscopes, instruments for making rock sections, and other instruments. The mineralogical laboratory possesses the apparatus necessary for the determination of minerals, the analysis of ores, and assay work. The biological laboratories are in the newly-erected wing. The laboratory for elementary work is furnished with all necessary facilities, while the laboratories (two in number) for advanced and research work have all the appliances needed for investigation on the lines of anatomy, histology, and embryology.

The Barnum Museum is open for the inspection of visitors from 3.30 to 5.00 P.M., every day but Sunday.

GODDARD GYMNASIUM

Goddard Gymnasium, the gift of Mrs. Mary T. Goddard, is well adapted to provide the prescribed class and individual work, and to furnish wholesome physical exercise for all. It is fitted with the apparatus usually seen in a good modern gymnasium, including facilities for light and heavy gymnastics, fencing, wrestling, basket ball, base ball, and the many indoor athletic sports. In the offices is a full set of anthropometric instruments for the physical examination of all students. There is a large gallery, with padded running track twenty-four laps to the mile. The dressing rooms, lockers, and baths are well lighted and commodious. The building is heated by steam and lighted by electricity.

ATHLETIC FIELDS

The old campus is just outside the gymnasium, and on it are excellent tennis-courts, two base ball diamonds, and a foot ball field. Its close proximity to the college buildings is of great advantage to all concerned.

Tufts Oval is the large inclosed field on College Avenue, where inter-collegiate contests are played. It includes two

base ball diamonds, a foot-ball field, and a quarter-mile, twenty-foot cinder track, for track athletics.

While athletics are encouraged and generously supported by the College, they are made subsidiary to the requirements of the curriculum, and thus the genuine advantage of the student is safeguarded.

CHEMICAL BUILDING

The building of the department of Chemistry contains laboratories for general inorganic, organic, analytical, and metallurgical chemistry, a large lecture-room, library, and weighing room, and the private laboratories of the professors in charge. The rooms are provided with all the modern laboratory conveniences, and are well supplied with apparatus and chemicals.

ROBINSON HALL

Robinson Hall is a memorial to the late Charles Robinson, and is designed for the use of the department of Engineering. It contains the physical and electrical laboratories, and drafting rooms for the department of Civil Engineering. In addition to recitation rooms, and offices of the instructors, there is a large lecture hall and a library.

PHYSICAL LABORATORIES. The laboratory of General Physics has a floor area of about 2500 square feet, and is provided with the necessary apparatus for quantitative work in mechanics, sound, light, and heat. Adjacent to it are rooms for photography, blue-printing, and experiments involving the use of chemicals and water.

Among the more important pieces of apparatus may be mentioned several balances of German and American make; a dividing engine, a chronograph, and a spectrometer from the Société Génevoise; an Elliott Brothers optical bench, and a large microscope with accessories. A great deal of serviceable apparatus is in use that has been made in the college workshops.

A photometer room thirty-nine feet long is used for the photometry of gas, incandescent and arc lamps, and such experiments in optics as require a long dark room. A large apparatus room is connected with the lecture hall and laboratories.

ELECTRICAL LABORATORIES. The testing laboratories are well equipped for general electric testing. The apparatus includes various makes of ammeters, voltmeters, wattmeters, galvanometers, electrometers, electro-dynamometers, resistance boxes, bridges, condensers, and standards of resistance, capacity, and electro-motive force.

The testing rooms are provided with direct current supply at any voltage from 2 to 120 volts from the battery room, and with alternating current at 100 volts from the transformer.

The transformer room is situated in the basement, and is equipped with transformers of various makes, including a battery of six, with oil insulation, and arranged to give any pressure from 1,000 to 30,000 volts. There is also a pair of Thomson Compensators, a Thomson 10-kilowatt electric welder, a 4-kilowatt rotary converter, and a special motor-driven high-frequency alternator, with which any periodicity up to 1,000 per second can be obtained. The armature of this alternator, which is of the Mordey type, is arranged with twelve independent circuits, which can be connected in any manner, so that a wide range of voltage and current can be readily obtained.

The building is lighted throughout by gas and electricity, and heated from an adjoining steam plant by direct and indirect methods.

BROMFIELD-PEARSON BUILDING

The Bromfield-Pearson Building contains the offices, recitation rooms, lecture and drafting rooms required for conducting the special courses of the school. It is also equipped for the Department of Drawing and Shopwork in the College. Abundant and uniform light is provided, and the drafting rooms are separated from the noise and confusion of the shops. The rooms are lighted by electricity from the adjoining Power Station, and power is furnished to the shops from the same source. One

end of the building is used exclusively by the pattern and machine shops. These are well equipped with modern tools and facilities for conducting the class work in mechanic arts.

THE POWER STATION

The Power Station is equipped with a one-hundred-and-twenty-five horse-power boiler, which supplies heat and power to the engineering buildings. It is also piped and equipped for experimental work in steam engineering.

The engine-room contains a twenty-five horse-power Sturtevant engine, directly coupled to a Mordey alternator, a forty-horse-power Harrisburg Standard engine directly coupled to a direct-current General Electric generator, a twenty-five horse-power Buckeye engine, and a ten horse-power Columbia gas engine belted to a direct-current generator. A storage battery of sixty elements furnishes current for lighting, power, and experimental purposes.

Connected with the Power Station is a forge shop and foundry, which has been recently enlarged to accommodate the increasing number of students.

THE DORMITORIES

The halls for the accommodation of students in the College of Letters are six in number. East, West, Dean, and Curtis Halls, for men, are arranged with convenient rooms in suites, are warmed by steam, lighted by gas, and have good modern plumbing. These halls provide rooms for two hundred and fifty men. Metcalf Hall, with accommodations for twenty-four women students, is a gift to the College by Mr. Albert Metcalf, of Newton. The first floor contains the rooms of the matron, a reception-room, cloak-room, reading-room, and dining-room. The second and third floors have pleasant rooms for students, with ample bath and toilet conveniences on each floor. In the wing is the kitchen on the first floor, the servants' room on the second. Every safeguard of health is provided. The Start House furnishes another home for women, with a matron, and rooms for thirteen students.

General Information

RELIGIOUS OBSERVANCES

Goddard Chapel, erected in 1882-83, is the gift of Mrs. Mary T. Goddard, as a memorial of her husband, the late Thomas A. Goddard. Morning prayers are held daily, at which attendance is required. The care of the pulpit on Sunday devolves upon the President of the College; but variety and interest are given to the preaching service by frequent exchange with neighboring clergymen. A trained choir, composed of men and women students, sings on Sunday. Attendance upon Sunday service is required; but permission is freely given to those who desire to attend elsewhere.

The RUSSELL LECTURE, established in accordance with a bequest of the late James Russell of Arlington, is delivered before the Trustees, Faculty, and students, on the second Sunday of the college year, by either a clergyman or a layman, on a subject prescribed by the testator.

Two subjects are presented, in alternate years.

The subject for 1904 was "*The Importance of Christian Faith and Belief in the Formation of the Character of the Good Citizen and the Good Man.*"

The subject for 1905 is "*The Sufficiency of the Promises of the Gospel to meet the Reasonable Wants of Man both in Time and in Eternity.*"

TUFTS COLLEGE STUDIES

A publication called "Tufts College Studies" has been established, as a means of presenting to the world the results of original work, done in the different departments of the College. The numbers, which are issued as material is ready, are distributed to educational institutions and learned societies. The College desires to establish regular exchanges of these Studies with all publishing institutions at home and abroad. Correspondence regarding exchanges should be addressed to the Librarian of Tufts College. Nine numbers have been

issued, containing the following papers: "The Anterior Cranial Nerves of Pipa," by G. A. Arnold; "Ectodermic Origin of the Cartilages of the Head," by Julia B. Platt; "The Classification of the Arthropoda," by J. S. Kingsley; "Development of the Lungs of Spiders," by O. L. Simmons; "Development of the Wing in Sterna Wilsoni," by V. L. Leighton; "The Morphology and Classification of the Pauropoda, with notes on the Morphology of the Diplopoda," by Frederick C. Kenyon; "The Chondrocranium in the Ichthyopsida," by Guy M. Winslow; "The Growth of 'Sartor Resartus,'" by D. L. Maulsby; "The Ossicula Auditus," by J. S. Kingsley; "The Development of the Eye Muscles in Acanthias," by Arthur B. Lamb; "The Cranial Nerves of Amphiuma," by J. S. Kingsley; and "The Systematic Position of the Cæcilians," by J. S. Kingsley; "A description of Cerianthus Borealis, Verrill," by J. S. Kingsley; "The Hypophysics in Amblystoma," by J. S. Kingsley and F. W. Thyng; "A new Habit for Chalcopyrite, by R. W. Richards; Notes on a Bicaudate Specimen of Limulus Polyphemus," by F. F. Smith; "Three bases of Abnormalities in Urodeles," by G. M. Winslow; "The Histology of the Digestive Tract of Amblystoma Punctatum," by G. A. Bates; Catalogue of the Mammals in the Barnum Museum of Tufts College, by A. E. Preble. The editorial board of TUFTS COLLEGE STUDIES for the current year is made up of the President of the College and Professors Knight, Dolbear, Kingsley, and Wade.

REGISTRATION

Every student in the College of Letters is required to file with the Registrar or his assistant a plan of study for the first term, on the morning of the opening day of that term; and a similar plan for the second term, on the morning of the last day of the first term.

The registration for students not in the Engineering Department is made in duplicate on blanks furnished for the purpose, one copy to be kept on file by the Registrar, the other to be used, in case of Freshmen, by advisors, and in case of Special

students and members of the upper classes, by major instructors. Each student also furnishes such data as are required by the Registrar for class lists. Registration is made in accordance with the following schedule:—

9–10 A.M.—All students except those in the Engineering Department will present themselves at the Secretary's office between these hours, and receive cards and assignments.

10–12 A.M.—All students, with the exception of members of the Freshman class, will meet their major instructors in accordance with assignments.

12–1 P.M.—Members of the Freshman class will meet their advisors in accordance with assignments.

2–4 P.M.—During this period students may consult instructors and file registration cards. All cards must be in the hands of the Registrar at or before four o'clock.

Arrangements for consultation may be made by individual students, toward the close of the first term.

Students will make their plans of study subject to the following regulations:—

No Freshman shall take a program of more than nineteen term hours during the first-half year.

No student shall take a program of more than eighteen term hours who has, for the preceding half-year, received the mark D in subjects aggregating three term hours, or the mark C in subjects aggregating more than six term hours.

No student shall take a program exceeding twenty-one term hours who, for the preceding half-year, has received the mark C in subjects aggregating three term hours, or the mark B in subjects aggregating more than nine term hours.

These rules do not apply to Physical Training.

Each student in the Engineering Department is required to file with the Secretary, on days as above described for other students, a plan of study, together with such data for class lists as shall be required.

Registration is made in accordance with the following schedule:—

10–12 A.M.—Students will register at the Secretary's office between these hours.

9–12 A.M.—During this time the instructors in the department may be consulted.

A registration fee of two dollars is imposed upon students in all departments who fail to register in person during the time prescribed above. This fee must be paid to the College Treasurer or his representative before registration can be permitted. Students are not recognized as members of classes until they have met all requirements of registration.

During the hours set apart for registration, instructors may be seen for consultation and for approval of plans of study, in rooms to be announced by posted bulletins.

PROGRAM

The unassigned subjects in the five o'clock column of the program are so far as possible assigned at a meeting in Ballou 4 at 12.30 P.M. on the second day of the first half-year, and at 4 P.M. on the first day of the second half-year. Every student concerned is required to be present at this time, either in person or by a proxy furnished with a complete tabular program of class engagements. Every instructor concerned is expected to to be present in person. These appointments supersede all others. No assignment or change of hour is official except as posted by the Committee on Program.

Any instructor is permitted, after the second full week of a term, to transfer a subject to another program hour, under the following conditions: (a) all students taking the subject must have the new hour free; (b) previous notice must be given to the Committee on Program; (c) the change, if finally made, must be reported at the College Office.

If such a change can be made in two consecutive years, the subject may be permanently transferred to the new hour.

The numbering of new subjects is to be determined by the Committee on Program in consultation with the respective instructors.

PROMOTIONS

Students in the courses leading to the degree of A.B. are registered as Sophomores when they have twenty-six term hours to their credit; as Juniors when credited with fifty-eight term hours; and as Seniors when credited with ninety term hours.

Students in the Engineering courses fail of promotion if they have deficiencies amounting to more than six term hours in the prescribed work of the year. The Engineering Committee will be in session from nine to twelve o'clock in the forenoon of the second day of the fall examinations, to consider the programs of such students in Engineering as have six or more term hours of conditions, or have failed to fulfil requirements imposed at the close of the previous year.

All prescribed work must be completed by the end of the Junior year, and all conditions must be removed on or before June 1st of the Senior year.

MAJOR SUBJECTS

Each student shall choose a major subject before the beginning of the Sophomore year.

A change of major subject may be made not later than the end of the Junior year, by vote of the Faculty, on petition approved by the two major instructors concerned.

A second major subject may be granted not later than the end of the Junior year, under the same conditions.

ATHLETICS

The supervision of all athletic sports is vested in a Board of Directors of Athletics, consisting of nine members, three of whom are appointed from the Faculty, three from the Alumni, and three elected from the undergraduates. This board through its sub-committees controls the expenditures of all moneys, the hiring of coaches, the arranging of games, the eligibility of players, and generally seeks to raise all college sports to a level of genuine usefulness. The Medical Director limits the candidates for college teams to those students who

have shown by a physical examination that they are qualified to engage in strenuous exercise.

ADMISSION FROM OTHER COLLEGES

Students entering Tufts College, after pursuing study in any other college of equal rank, are credited with the number of hours of work actually done toward the requirements of Tufts College, as certified by the proper authorities of the college from which the student comes. Such students must present satisfactory certificates showing the amount and character of work already accomplished, in order to obtain credit on a course of this College.

SPECIAL STUDENTS

Students who are not candidates for a degree, and who wish to pursue a special course of cognate studies, will be admitted to the College, subject to the following regulations:—

1. Every Special Student shall choose a major department, and shall make up a plan of study under the direction and subject to the approval of the major instructor.

2. The student shall satisfy the instructor in each subject included in the approved plan of study that he is able to pursue the work.

3. A Special Student, on leaving College, shall be entitled to a certificate giving the grade attained in each subject pursued, and signed by the President and the Registrar.

4. Special students in Electrical Engineering are required to pass examinations in General Physics, Trigonometry, and Elementary Calculus.

TERMS AND VACATIONS

Commencement occurs on the third Wednesday in June, and the college year begins thirteen weeks from the following Thursday. Once in seven years the vacation is fourteen weeks in length. The year is divided into two terms of eighteen weeks of work each. There are no college exercises during a recess of three days at Thanksgiving, two weeks at Christmas, and one week from the Wednesday evening preceding the first Thursday in April to the following Wednesday evening. On public holidays,—Washington's Birthday, the nineteenth of April, the seventeenth of June, and Memorial Day,—the col-

lege exercises are suspended. An examination period of ten days is held at the close of each half-year, during which time the daily class exercises are suspended.

A fine of two dollars will be levied on each student who shall fail to report in person to the Secretary of the Faculty or his deputy within two hours after the last program appointment of the student preceding each vacation of more than a single day, or within two hours before his or her first program appointment following each vacation of more than a single day. Such registration must take place during the regular office hours of the Secretary. The regularly appointed registration of studies after the summer vacation shall be construed as reporting in person.

ABSENCES

In case of absence, from any cause, involving more than three consecutive progam appointments, report is required to be made, either in person or by mail, messenger, or prepaid message, to the Secretary of the Faculty, together with the reason for such absence, and a statement of its probable duration, if it is to continue. This report may be made before the beginning of such absence. For the first failure to make such a report a fine of fifty cents shall be levied, and for each subsequent failure a fine of two dollars. In case of the anticipated absence of any student organization numbering not less than ten persons, notice may be given for all by one authorized representative or manager.

Not more than two hours previous to entering upon college work, after an absence involving more than three consecutive program appointments, each student shall report in person to the Secretary of the Faculty or his representative. In case of failure, fines of fifty cents and two dollars shall be levied, as above provided. Reports of the return of organizations may be made by the managers.

A report filed in accordance with these regulations shall not take the place of the required registration before and after vacations of more than a single day.

Students intending to leave college or to drop a single subject are required to report as for the beginning of an absence.

The above requirements will be waived in the case of individuals only in the event of serious illness or accident; and for the college at large only in case of storms so heavy as to block the customary avenues of communication and traffic.

EXPENSES

The charge for instruction in all departments in the College of Letters, except the Department of Engineering, is *one hundred dollars* a year, or *four hundred dollars* for the full course leading to any degree other than in Engineering, whether the course be completed in three, four, or more years.

The charge for instruction in the Department of Engineering is *one hundred and twenty dollars* a year.

Students in the chemical laboratories are charged for breakage, and *four dollars* a term for materials used. A fee of *two dollars* a term is required of all students taking laboratory work in Biology. Students who take shop-work, except those in the engineering courses, are charged extra.

Half room-rent, including heat, ranges from twenty-five to ninety-one dollars, in the several dormitories for men. In those for women, half room-rent ranges from thirty to eighty-five dollars. Students furnish their own rooms. Any damage done by students to college property is charged in the term bills. Rooms in the college halls will be open for occupancy of students on and after the Wednesday of the week preceding the opening of the college year. Non-resident students in all departments, except the Medical and Dental Schools, are subject to a fixed annual charge of ten dollars.

A place of study for non-resident women students is provided in Ballou Hall, without extra charge. Men students may obtain the use of day-rooms in the dormitories by arrangement with the Bursar.

Every student is required to deposit with the Bursar of the College, *before October fifteenth*, either a bond with two satisfactory sureties for the sum of *two hundred dollars*, or the sum of

one hundred dollars in cash, which sum, with interest at the rate of four per cent. yearly, will be returned when the student leaves the College, his term bills first being paid in full. No officer or student of the College will be accepted as a bondsman.

Students may deposit with the Bursar money for safe keeping. A receipt will be given, and the money, or any part of it, may be withdrawn on demand.

The charges for each year are contained in two bills, of which the first is made at the middle of the year, and is payable on the first day of March; the second is made immediately after Commencement, and is payable on the first day of the following college year; but the second bill of the Senior year must be settled by the Saturday before Commencement, or graduation will not be permitted. All college charges are payable to the Bursar, and all arrangements with regard to rooms are to be made with him.

The Executive Committee of the Trustees has power to order the suspension or dismissal of a student for failure to keep his bills promptly paid, or for other good and sufficient cause.

By an arrangement with the Somerville Hospital, students are assured free hospital treatment in case of illness, during their entire course. The cost to each student is two dollars a year.

Students board in commons at $3.75 per week; in private families at $3.50 to $5.00 for table board. Other expenses, such as for light, furniture, books, clothing, washing, and incidentals, vary with the economy of each student.

The following estimates represent the fixed annual expenses:—

Tuition	$100.00	$100.00
Physical Culture, including gymnasium and grounds	10.00	10.00
Reading-room	1.00	1.00
Hospital	2.00	2.00
Board, $4.00 to $5.00 a week (36 weeks)	144.00	180.00
Total	$257.00	$293.00

For the expenses of students of Engineering, consult the table of contents, under "Department of Engineering."

OFFICE HOURS

The President may be found in the Faculty Room in the morning, from 8.45 to 9.45. The Dean of the College of Letters is in his office in Ballou Hall, except for class engagements, throughout the forenoon. The office hours of the Dean of the Engineering Department are from 4.30 to 5.30 P.M., in the Bromfield-Pearson Building. The office of the Registrar and Secretary is open every morning, from 8.45 to 12.45, and every afternoon except Saturday, from 2.00 to 5.00. The Bursar will be in his office in Ballou Hall during term time, Monday, Wednesday, and Friday morning, from 8.30 to 12.00 o'clock.

SCHOLARSHIPS

Awards of scholarships are made by the Board of Trustees, on the recommendation of the Faculty. The obtaining of a scholarship for one year does not constitute any title to a second nomination. Application for scholarships must be filed with the Bursar on blanks furnished for the purpose, on or before the first day of November; and, if the applicant be a minor, must be sanctioned by his parent or guardian. Scholarships will be granted, in general, only to students actually in need of such aid. No one need apply who has not made satisfactory progress, or who has come under any grave censure in the course of the year.

Scholarships are available for those students only whose term bills are fully paid within ten days after the opening of each college term, or after such bills shall have become due. The bills of any student whose connection with the College ceases are due at that time. The term bills of members of the graduating class are payable on the Saturday preceding Commencement day.

No scholarship is available to any student who is not a resident of a college dormitory, unless excused in writing from such residence by the authority of the Executive Committee of the Board of Trustees.

The following scholarships, the yearly income of which is one hundred dollars each, are awarded annually by the Trustees, but, except in special cases, when the donor has otherwise stip-

ulated, the Trustees will award scholarships in the sum of fifty dollars each.

THREE STATE SCHOLARSHIPS.—Established in accordance with a resolve of the Commonwealth.

FIVE HOWLAND SCHOLARSHIPS.—Established from the income of the bequest of the late Edwin Howland, of South Africa.

FIVE WALKER MATHEMATICAL SCHOLARSHIPS.—Established in honor of the late William J. Walker, M.D., of Newport, R. I., and payable from the income of the Walker Fund.

TWO MOSES DAY SCHOLARSHIPS.—Founded by the late Moses Day, of Roxbury.

THE A. A. MINER SCHOLARSHIP.—Founded by the late A. A. Miner, D.D., of Boston.

THE REBECCA T. ROBINSON SCHOLARSHIP.—Founded by the late Charles Robinson, LL.D., of Newton.

THE WILLIAM OSCAR CORNELL SCHOLARSHIP.—Founded by William Oscar Cornell, of Providence, R. I.

THE ARA CUSHMAN SCHOLARSHIP.—Founded by Ara Cushman, of Auburn, Me. This scholarship is not available during the present year.

THE LAURA A. SCOTT SCHOLARSHIP.—Founded by Mrs. Laura A. Scott, of Ridgefield, Conn.

THE STOW SCHOLARSHIP.—Founded by the late Mrs. Eugenia D. Stow, of Meriden, Conn.

THE NORCROSS SCHOLARSHIP.—Founded by James A. and Mrs. Mary E. Norcross, of Worcester.

THE ANDERSON SCHOLARSHIP.—Founded by John M. Anderson, of Salem, in the name of John M. and Rebecca Anderson.

THE TRAVELLI SCHOLARSHIP.—Founded by Mrs. Emma R. Travelli, of Newton.

THE WHITTIER SCHOLARSHIP.—Founded by the late Charles Whittier, of Roxbury, in the name of Charles and Eliza Isabel Whittier.

THE TALBOT SCHOLARSHIP.—Founded by the late Newton Talbot, of Boston.

THE SIMONS MEMORIAL SCHOLARSHIP.—Founded by Mrs. Mary A. Simons, of Manchester, N. H., in memory of Hiram H., Augustus, and Frank Simons.

THE AMASA AND HANNAH L. WHITING SCHOLARSHIP.—Founded by Mrs. Hannah L. Whiting, of Hingham.

THE MARTHA GOLDTHWAITE MEMORIAL SCHOLARSHIP.—Founded by the late Willard Goldthwaite, of Salem.

THE ANDREW J. CLARK MEMORIAL SCHOLARSHIP.—Founded by Mrs. Abbie B. Clark, of Orange.

THE SARAH E. SAYLES MEMORIAL SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE COUSENS SCHOLARSHIP.—Founded by the late John E. Cousens, of Brookline, in the name of John E. and Sarah C. Cousens.

THE BENJAMIN F. SPINNEY SCHOLARSHIP.—Founded by Benjamin F. Spinney, of Lynn.

THE HENRY F. BARROWS SCHOLARSHIP.—Founded by Henry F. Barrows, of North Attleboro.

THE ELLERY E. PECK MEMORIAL SCHOLARSHIP.—Founded by Henry Rollins, of Bangor, Me. The income of this scholarship is not at present available.

THE J. H. MORLEY MEMORIAL SCHOLARSHIP.—Founded by Herbert Small Morley, of Templeton.

THE EDWIN H. CHAPIN MEMORIAL SCHOLARSHIP.—Founded by friends of the late E. H. Chapin, D.D., in New York City.

THE THOMAS A. GODDARD MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HOSEA BALLOU, 2D, MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HENRY E. COBB SCHOLARSHIP.—Founded by the late Henry E. Cobb, of Boston.

THE MARY ANN WARD SCHOLARSHIP.—Founded by Sylvester L. Ward, of Boston.

THE MARIA P. WINN SCHOLARSHIP.—Established from a bequest of the late Mrs. Maria P. Winn, of Woburn.

THE JOSEPH D. PEIRCE MEMORIAL SCHOLARSHIP.—Founded by the children and other relatives of the late J. D. Peirce, D.D., of Attleboro.

FIVE JOHN AND LUCY H. STOWE SCHOLARSHIPS.—Five scholarships for women students, founded by the late Mrs. Lucy H. Stowe, of Lawrence.

TWO SIMMONS SCHOLARSHIPS.—Founded by the will of Robert F. Simmons, of Attleboro, in the name of Mary F. and Robert F. Simmons.

THE JOSHUA S. AND HARRIET N. WHITE SCHOLARSHIP.—Founded by the late Joshua S. White, of Pawtucket, R. I.

THE JOHN B. PERKINS SCHOLARSHIP. — Founded by Ann Maria Perkins, of Medford.

TWO BARNARD SCHOLARSHIPS.—Founded by Caroline M. Barnard, of Everett.

THE BARTLETT SCHOLARSHIP.—Founded by the late Mrs. Nancy Bartlett, of Milford.

THE B. H. DAVIS SCHOLARSHIP.—Founded by the Rev. B. H. Davis, of Weymouth, for the benefit of students of the College of Letters who are preparing to enter the Christian ministry.

THE LATIMER W. BALLOU SCHOLARSHIP.—Founded by the late Latimer W. Ballou, of Woonsocket, R. I.

THE NATHANIEL WHITE SCHOLARSHIP.—Founded by Armenia S. White, of Concord, N. H.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

THE RHODE ISLAND SCHOLARSHIP.—Founded by several persons in Rhode Island.

TWO CHARLES AND FANNIE A. MINER BOOTH SCHOLARSHIPS.—Founded by the late Charles Booth, of Springfield, Vermont.

THE LUTHER GILBERT SCHOLARSHIP.—Founded by the late Mrs. Luther Gilbert, of Roxbury.

THE ORMSBEE CLASS SCHOLARSHIP.—Founded by Benjamin F. Smith, of Pawtucket, R. I.

TWO MARY AND LUTHER GILBERT SCHOLARSHIPS.—Founded by Mrs. Mary G. Knight, of Roxbury, for the benefit of women.

THE JAMES M. AND EMILY COOK SCHOLARSHIP.—Founded by Henrietta J. States, of Boston.

THE WILLIAM H. SHERMAN SCHOLARSHIP.—Founded by the late William H. Sherman, of Boston.

THE DAVIS COOK SCHOLARSHIP.—Founded by the late Davis Cook, of Cumberland, R. I.

The following scholarships of fifty dollars each are awarded annually:—

THE A. A. MINER SCHOLARSHIP.—Founded by the late A. A. Miner, D.D., of Boston.

THE PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of Brooklyn, N. Y.

THE MOSES DAY SCHOLARSHIP.—Founded by the late Moses Day, of Roxbury.

THE JOSEPH H. WALKER SCHOLARSHIP.—Founded by Joseph H. Walker, of Worcester.

THE GEORGE C. THOMAS SCHOLARSHIP.—Founded by George C. Thomas, of Philadelphia, Pa.

THE ALBERT W. SAYLES SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

The following scholarships are awarded under special conditions:—

THE GREENWOOD PRIZE SCHOLARSHIP IN ORATORY.—Founded by the late Mrs. Eliza M. Greenwood, of Malden, and given to such student as shall have made, as the result of faithful work, together with at least a fair degree of attainment, the greatest improvement in Oratory.

THE WENDELL PHILLIPS MEMORIAL SCHOLARSHIP.—Founded to perpetuate the name, fame, and influence of Wendell Phillips. This scholarship is to be awarded to a student who has completed the Freshman and Sophomore years, and he is to have the benefit of it during the remainder of his course. The beneficiary must be of sound body, high character, and ability in declamation and debate, and must comply with certain special conditions, including participation in a competitive debate of the applicants at the end of the Sophomore year. The specific conditions governing the award of this scholarship may be obtained by those intending to apply therefor from the Secretary of the Faculty, to whom application should be made early in the Sophomore year. The income of this scholarship is at present seventy dollars.

THE MOSES TRUE BROWN SCHOLARSHIP.—A scholarship yielding fifty dollars annually, founded by the late Moses True Brown, of Sandusky, Ohio, formerly Professor of Oratory in Tufts College, for encouraging and assisting worthy students in the department of Oratory.

THE PRIZE SCHOLARSHIP OF THE CLASS OF 1898.—The sum of fifty dollars is given annually by the class of 1898 to that Senior who at the end of the Junior year shall have maintained the highest excellence in a course of study broadly and wisely chosen.

LOAN FUND FOR WOMEN.—The Woman's Universalist Missionary Society of Massachusetts maintains a fund which is loaned to deserving women students, in sums of one hundred dollars, at four per cent. This fund now amounts to about three thousand dollars.

PRIZES

GODDARD PRIZES.— In the second term of the academic year four prizes of *fifteen dollars* each are assigned from the Goddard Prize Fund, as follows:—

A prize for the best examination, by a member of the Junior or Senior class, on the Agricola of Tacitus, or the sixty-fourth poem of Catullus, or a play of Plautus or Terence, or the Ars Poetica of Horace.

A prize for the best examination in Plato's Symposium, or the Agamemnon of Æschylus, including an account of the author and his works.

A prize for the best examination in the Mathematics of the first year.

The translations must be left at the President's office by the first day of May, in sealed envelopes, accompanied by sealed letters containing the authors' names.

RHETORICAL PRIZES.—Six prizes are awarded as follows:—

Two prizes, of *twenty* and *ten dollars* respectively, to the best readers among students who have taken six term hours in Oratory.

Two prizes, of *twenty* and *ten dollars* respectively, to students who have taken four term hours in Oratory, for the best exhibition of improvement and skill in elocution.

Two prizes, of *twenty* and *ten dollars* respectively, on the same conditions, to students who have taken two term hours in Oratory.

The rhetorical prizes are awarded by a committee, chosen by the Faculty, who judge the work presented by the competitors upon the public day appointed for that purpose. In order to enter the public competition, candidates, as well as their selections, must be approved by the Professor of Oratory. A preliminary competition is held about ten days before the competition announced in the calendar, at which a committee of the Faculty determine the contestants in the final and public readings.

ENTRANCE EXAMINATION PRIZES.—Two prizes, of *thirty* and *twenty dollars* respectively, are awarded for the best entrance examinations. No one will be considered a candidate for such prize unless he has passed the regular examinations in all the subjects required for admission to the College, and has been admitted without conditions. These prizes are payable at the end of the first term in College.

The foregoing prizes are not awarded, unless in the opinion of the respective judges there is sufficient merit in the several contests to warrant their distribution.

A regular day has been appointed for the annual announcement of the award of prizes and the assignment of Commencement parts,—the Wednesday before the beginning of the Thanksgiving recess.

COMMITTEE OF INFORMATION

It is the object of the Committee of Information to bring the student body in touch with the business and professional world by supplying information concerning positions that are available for graduates, or that may be temporarily filled by undergradu-

ates during the summer vacation. By a systematic record, in which undergraduates and alumni coöperate, information is gratuitously at the disposal of both employer and employed.

HONORS AND DEGREES

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the College of Letters who shall have attained Grade A in approved subjects aggregating not less than eighteen term hours in a major department, and an average of Grade B in the collateral subjects. Subjects marked in the catalogue with an asterisk (*) will not count for Honors. Those marked with a double asterisk (**) will be counted for Honors only when special requirements, to be defined by the instructors, have been complied with. Final Honors will be conferred only upon recommendation of the head of the department in which Honors are desired.

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the Engineering courses who shall have complied with the following conditions:—

In the two years immediately preceding graduation:—

1. He must have attained Grade A in the equivalent of six hours a week for a year in the subject in which he desires Honors.

2. He must also have attained Grade A in extra work in this or a cognate subject equivalent to three hours a week for a year.

3. He must have attained Grade B in the average of all his studies during this period.

The following subject in the Engineering Courses is open for Honors: ELECTRICITY.

HONORABLE MENTION will be made in the Commencement program and in the annual catalogue of a student who has attained, during the two years immediately preceding graduation, Grade A in nine term hours and not less than Grade B in three additional term hours of approved work in one department. Subjects marked in the Catalogue with an asterisk (*) or with a double asterisk (**) are under the conditions explained in the preceding paragraph concerning Final Honors in the courses in Liberal Arts.

THE DEGREE OF BACHELOR OF ARTS, will be conferred at Commencement by the Trustees, on recommendation of the Faculty, upon students who shall have complied in a satisfactory manner with the conditions governing the degree as stated on pages 53 to 55.

THE DEGREE OF BACHELOR OF SCIENCE will be conferred upon students who shall have completed the Course in General Science, the Course in Biology, or in Chemistry, or the Medical Preparatory Course, complying in a satisfactory manner with the conditions stated on pages 101 to 105.

THE DEGREE OF BACHELOR OF SCIENCE in Civil Engineering, Electrical Engineering, Mechanical Engineering, or Chemical Engineering, will be conferred upon students who shall have completed the required course, as defined on pages 115 to 123.

Students of the courses in the College of Letters may so arrange their elective work as to make it possible to obtain the degree of Bachelor of Science in Civil Engineering, Electrical Engineering, Mechanical Engineering, or Chemical Engineering, after a graduate course of one year in the Engineering Department. See pages 113, 114, for particulars.

For the advanced degrees of MASTER OF ARTS, MASTER OF SCIENCE, and DOCTOR OF PHILOSOPHY, see the announcement of the Graduate Department, pages 153 to 161.

THE DIVINITY SCHOOL

Faculty of the Divinity School

ELMER H. CAPEN, D.D., LL.D., PRESIDENT
Professor of Moral Philosophy and Political Economy

CHARLES H. LEONARD, A.M., D.D., DEAN
Goddard Professor of Homiletics and Pastoral Theology

HARRY G. CHASE, B.S., SECRETARY

WILLIAM R. SHIPMAN, A.M., D.D., LL.D.
Goldthwaite Professor of Rhetoric, and Professor of Logic

EDWIN C. BOLLES, PHD., D.D.
Dickson Professor of English and American History

WILLIAM G. TOUSEY, A.M., D.D.
Ryder Professor of Ethics and the Philosophy of Theism

GEORGE T. KNIGHT, A.M., D.D.
Packard Professor of Christian Theology

GEORGE M. HARMON, A.M., D.D.
Professor of Biblical Theology

WARREN S. WOODBRIDGE, A.M., B.D.
Woodbridge Professor of Applied Christianity

J. STERLING KINGSLEY, SC.D.
Professor of Biology

HERBERT E. CUSHMAN, B.D., A.M., PHD.
Professor of Philosophy

DAVID L. MAULSBY, A.M.
Professor of English Literature and Oratory

THOMAS WHITTEMORE, A.B.
Professor of English

HENRY C. METCALF, A.B., Ph.D.
Jackson Professor of Political Science

LAWRENCE B. EVANS, PH.D.
Professor of History

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

CHARLES C. STROUD, A.B., M.D.
Instructor in Physical Training

NON-RESIDENT LECTURERS

FREDERICK W. HAMILTON, A.M., D.D.
The Reconstruction of Theology

HENRY W. RUGG, D.D.
Christian Missions

BYRON GROCE, LITT.D.
The Preacher as Teacher

HAROLD WILLIAMS, A.M., M.D.
The Care of the Body

COMMITTEE ON PROMOTIONS

Dean Leonard, *Chairman;* Professors Metcalf and Woodbridge.

The Divinity School

The Divinity School is one of the co-ordinate departments of Tufts College. Students of the School are members of the College, enjoying its privileges and subject to its regulations.

CONDITIONS OF ADMISSION

1. The Divinity School is open on equal terms to students of every denomination of Christians. Candidates unknown to the Faculty must present satisfactory testimonials as to character.

2. Bachelors of Arts whose course of study has included Greek are admitted to a three years' course without examination, as candidates for the degree of Bachelor of Divinity. Graduates holding other literary degrees than that of A. B. may be required to pass an examination in the subjects in which their college course differs from the A. B. course.

3. Undergraduates who enter for a degree must conform to the regular conditions of admission to the College of Letters as stated above, see pages 39 to 52.

4. Special students, not candidates for a degree, may be admitted, in accordance with the general custom of the College, to such departments of the regular work of the School as they are fitted to undertake.

REQIUREMENTS FOR THE DEGREE OF BACHELOR OF DIVINITY

The College of Letters has lately decided that certain studies, hitherto pursued in the Divinity School only, are properly regarded as culture studies, and therefore offers them to all its students. Taking advantage of this fact, the student who enters College with Greek, and with other good preparation, may so

shape his course as to obtain the degree of Bachelor of Arts in four years, and that of Bachelor of Divinity in one more year.

Graduates from other institutions may obtain the degree of Bachelor of Divinity after having completed those parts of the course of this School which have not been included in their previous studies. The time thus required for those holding the degree of A.B. is three years or less.

In all cases, however, the ground of promotion and of graduation is the intellectual attainment of the individual student, and not a fixed requirement of a certain number of years of study, except that no degree will be granted for less than one year of resident work.

SYNOPSIS OF THE REQUIREMENTS FOR B.D.

[The unit here used (called the "term hour") is equivalent to one program hour a week for a half-year.]

	Term Hours
Language (Hebrew, Greek, and German)	24
Science (Mathematics, Physics, and Biology)	18
History (Civil and Religious)	27
Bible (Language, History, etc.)	33
Philosophy (Psychology, Logic, Ethics, Systematic Theology, etc.)	33
Sociology (Law, Economics, and Applied Christianity)	30
English (Rhetoric, Literature, Oratory, and Homiletics)	36
Physical Training	2
Total	203
Deduct (counted twice)	15
Total term hours	188

In order to do in five years the work included in this synopsis, the student must begin the prescribed course with his Freshman year, and must manifest ability to carry with profit so heavy a program. He may receive A.B. at the end of four years, or with B.D. at the end of his course, as he may choose.

For all divinity students the major instructor and official adviser on general matters relating to college affairs is the Dean of the Divinity School, or some appointed representative from the Divinity Faculty.

Departments of Instruction

Following is a statement of subjects of study selected from the statement for the College of Letters, the numbering and other marking being preserved for convenient reference. Those subjects are selected which are most likely to be chosen by the student who is preparing for the Christian ministry. A fuller statement is made (pages 194 to 201), mainly of those subjects that are specially related to the minister's profession. The student should understand, however, that all the work offered in the College of Letters is open to him, under the usual regulations.

ENGLISH

See subjects 1, 2, 5, 10, 12, 17, 18, and 27, on pages 58 to 60 of this catalogue.

ORATORY

See subjects 1 and 3, pages 60, 61.

GERMAN

See subjects 1 to 3B, page 62.

GREEK

See subjects 1 and 2, page 67.

HEBREW

See subjects 1 and 2, page 69.

PHILOSOPHY

See subjects 1 to 8, pages 70, 71.

HISTORY

See subjects 1 to 5, and 11 to 14, pages 73 to 75.

PUBLIC LAW AND ADMINISTRATION

See subjects 1 to 6, pages 75, 76.

POLITICAL SCIENCE

See subjects 1 to 3, pages 76, 77.

MATHEMATICS

See subject 1, page 78.

PHYSICS

See subject 1, page 80.

BIOLOGY

See subject 1, page 85.

PHYSICAL TRAINING

See page 93.

OLD TESTAMENT

PROFESSOR WOODBRIDGE

The aim is to secure, chiefly through the English version, a working knowledge of the Old Testament, and an appreciative acquaintance with Hebrew thought and life. The course includes a history of the book; a history of the people Israel from whose literature the book was made; a history of the development of the literature; followed by critical and interpretative study. Hebrew is offered as the foundation of a more critical study.

SUBJECTS

1. History of the Jews before Christ. A study of the political relations, institutions, and literature of the Jewish people. [History 11.*] *Mon., Wed., Fri., 4.00.* PROFESSOR HARMON.

2. General Introduction: the English Bible, other versions, the manuscripts, the canon. Special Introduction: history of the literature, origin of particular books. *Mon., Wed., Fri., 9.45.* (F)
PROFESSOR WOODBRIDGE.

3. The Hebrew Language [Hebrew 1†]: the elements of grammar. Translation of portions of Genesis, of the book of Ruth, and other selections. *Tu., Th., Sat., 11.45.* PROFESSOR WOODBRIDGE.

4. Hebrew Language [Hebrew 2†]: syntax, critical readings from the Historical Books, from the Prophets, and the Psalms. *Three hours a week.*
PROFESSOR WOODBRIDGE.

5. Principles of Criticism; Critical Analysis of Genesis; the Pre-Exilian Prophets; Isaiah, with special reference to Authorship and Date; the Development of Hebrew Law; the Prophets of the Exile; Post-Exilian Literature. *Tu., Th., Sat., 8.45.* PROFESSOR WOODBRIDGE.

* See page 74.
† See page 69.

NEW TESTAMENT

PROFESSOR HARMON

1. New Testament History [History 12*]. This subject covers the history of the Jews during the lifetime of Jesus, including their relations to the Roman government, and their political, social, and religious institutions and customs. It also includes the origin, extension, and development of the Christian Church until the destruction of Jerusalem. Incidentally these results form the historical background for the study of the New Testament literature.

2. New Testament Criticism. This subject covers the investigation of the origin and character of the Gospels and the apostolic literature, the aim being to acquire an understanding of the general conditions essential to the correct interpretation of the New Testament writings.

3. New Testament Exegesis. The work consists of lectures on methods of interpretation, followed by an examination of the Synoptic Gospels in the Greek, with the object of acquiring a knowledge of the ministry and teachings of Jesus. It includes also a study of the Pauline Epistles and the Johannine literature.

SUBJECTS

1. History of the beginnings of Christianity. A study of the times of Jesus, of the rise and growth of the apostolic church, and of the origin of its literature. *Mon., Wed., Fri., 3.00.* (F) PROFESSOR HARMON.

2. New Testament Criticism. *Mon., Wed., Fri., 9.45.* (S) PROFESSOR HARMON.

3. New Testament Exegesis and Theology. *Mon., Wed., Fri., 11.45.* PROFESSOR HARMON.

HISTORY OF RELIGIONS

PROFESSORS KNIGHT AND WOODBRIDGE

1. History of Non-Christian Religions [History 13*]. The primary aim of this study is a general knowledge and catholic temper regarding the great religions outside Christianity. A

* See page 72.

secondary utility is found in that a candid study of the excellences and defects of many religions renders the student more able to reject the false and more inclined to rest in the true, and to give it his confidence and strength.

The sources of information to which the student is referred are in the library. They embrace the important authorities, both original and secondary.

The religions studied are those of ancient Egypt, Chaldea, Greece, Rome, and Persia, of ancient and modern India, China, Japan, and Turkey.

The chief topics noted are: the deity; the forms and meaning of worship; the theory of ethics, and the sanctions of moral life, including the scheme of salvation; the actual condition of the people representing each religion.

For the study of each topic in turn, the class is furnished with a syllabus and references. The results of their investigation are criticised and co-ordinated by students and instructor in the class-room.

2. The History of Christianity: Church History [History 14†].

The purpose is to secure a knowledge of the leading facts and forces in the history of the Christian Church, in its various branches. By such a knowledge, discovering the causes now at work in religion, the student obtains a grasp of present facts and problems such as he can obtain from no other source. Incidentally he becomes familiar with theological terms, and is furnished with the tools of theological work. In general, since in some degree the individual grows as the mass has grown, he finds in this study an education, an orderly development of his faculties.

The topics generally studied in regard to each period are: the external growth of the Church and its relations to the State; the internal organization; intellectual life and doctrine; moral life; the form and substance of worship. In the latter part of the year, special study is made of the chief re-

* See page 74.
† See page 75.

ligious sects in the United States, and, lastly, of the history of doubt.

The books used by the student are mostly contained in the Library of the College and in that of the Universalist Historical Society.

In preparation for the regular class-room exercise, the student is provided with analysis of each topic in order, and with references to original and secondary authorities. The student brings the result of his investigation to the class-room, for criticism by his associates and instructor. At the completion of each topic the results are organized, and a written review held, the papers of which are returned, with comments as to truthfulness and mode of handling.

The students are also instructed in the methods of original investigation from primary authorities.

SUBJECTS

[1. The Non-Christian Religions: Studies of the Religions and Civilizations of ancient Egypt, Chaldea, Greece, Rome, and Persia, and of Ancient and Modern India, China, Japan, and Turkey. *Tu., Th., Sat., 8.45.* (F) PROFESSOR KNIGHT.]

[2. Church History: History of the Church, of the Sects, and of Doctrines, from the Apostles to the Present Time; History of Doubt. *Tu., Th., Sat., 9.45.* PROFESSOR WOODBRIDGE AND PROFESSOR KNIGHT]

ETHICS

[Philosophy 6, 7, 8. See page 71.]

PROFESSOR TOUSEY

Analytical and inductive study of the moral experience is followed by an attempt to develop a correct moral theory. Attention is given to the more important questions in ethical philosophy. Such doctrines as sentimentalism, hedonism, utilitarianism, intuitionalism, naturalism, and determinism are studied, not merely in a critical spirit, but with a view to discover the special aspects of truth for which they stand.

A course is also offered in the history of ethical speculation, and of the development of moral customs and ideas. Finally, the bearing of ethical theory on the leading problems of the

individual and the social life is discussed, particular attention being given to such subjects as duties, rights, education, charities, State aid, temperance, socialism. Some attention is also given to casuistry. The course concludes with a review of what is distinctively known as Christian ethics. The instruction throughout is shaped to bring into clearness the fundamental principles of morality, and to show their importance in the conduct of the personal life and in the moral guidance of others.

SUBJECT

1. The Moral Nature; Ethical Theory; Evolution of Morals; Practical Ethics; Ethics and Theism. *Mon., Wed., Fri., 10.45.* (F)
PROFESSOR TOUSEY.

2. Practical Ethics. Moral Theory in relation to the Individual and Social Life. *Tu., Th., Sat.* 10.45. (S) PROFESSOR TOUSEY.

3. Ethics, Historical and Critical. History of Ethical Speculation; development of moral customs and ideals. *Mon., Wed., Fri., 10.45.* (S)
PROFESSOR TOUSEY.

PHILOSOPHY OF THEISM

[Philosophy 15. See page 72.]

PROFESSOR TOUSEY

At the outset some attempt is made to articulate the Final Problem, and to indicate the various answers that have been proposed. The different modes of the theistic argument are then reviewed, their grounds scrutinized, and their logical value considered. This imposes a patient hearing and pains-taking judgment of objections which have found expression in earlier and later times. In treating of the office of reason in matters of belief, and of the limits of the understanding, both mysticism and agnosticism come in for notice; and in discussing the attributes of God, and His relation to the universe, pantheism and pessimism receive somewhat special attention. The general method here, as in Ethics, is to employ treatises available as texts, and to supplement them by means of annotations, lectures, and parallel readings, the aim being to lead the student to the sources of evidence, and to establish a vigilant and correct method of inquiry. Much importance is attached to the dialectic of the class-room as securing a ready command of resources,

and as a corrective of ill-defined notions and hasty inference. An effort is made to treat subjects in the light of contemporary criticism and the latest developments of science; and, by testing and chastening conclusions, to provide against fanaticism on the one hand and frivolity of judgment on the other.

SUBJECT

1. The Final Problem; Limits of the Intelligence; Theistic Arguments; Final Cause in Nature; Anti-Theistic Theories. *Mon., Wed., Fri., 11.45.*
PROFESSOR TOUSEY.

THEOLOGY

PROFESSOR KNIGHT

The purpose is, primarily, to assist the student to think independently on theological subjects, and to abide in the consequences. In pursuing this purpose, attempt is made to co-ordinate the products of biblical theology, religious history, natural theology, ethics, and, indeed, of all the proper sources of material, and thus to produce a scientific theology. It is believed that such a system will deserve and receive the student's confidence, and will enlist his energies.

The method includes several stages:—

1. The history of important doctrines and creeds, as a general introduction.

2. *a.* Special history of the topic in hand, with analysis and classification of opinions and theories according to their logical relations.

b. The collection of the facts, so far as given in the present state of knowledge, and the criticism of the theories on the basis of the facts.

c. The organization of the results into a scientific product.

d. Illustrative applications to practical problems,—ecclesiastical, political, social, and personal.

SUBJECTS

[1. Historical Introduction. *Mon., Wed., Fri., 4.00.* (s)
PROFESSOR KNIGHT.]

[2. Theology; Anthropology; Soteriology; Eschatology; Critical Study of Modern Doctrines. [Philosophy 16.*] *Tu., Th., Sat., 11.45.*
PROFESSOR KNIGHT.]

APPLIED CHRISTIANITY

PROFESSOR WOODBRIDGE

The topic of study is the ministry of the church in the world. The purpose is to secure the efficiency of pastor and church in the promotion of the Christian life. The course covers one year, and is a series of lectures, supplemented by investigation. The lectures deal, in order, with the foundation principles of the ministry of the church, the proper scope and limitations of its work under these principles, efficient organization and best instrumentalities, and the specific duties which present-day life and problems make imperative. The course in investigation requires of the student a special study of some given community in its practical attempts at solving its own problems. He visits the institutions of religion and philanthropy, personally observes their work, and makes written report of the same for discussion in the class-room.

SUBJECT

1. The Efficient Ministry: Fnndamental Principles; Instrumentalities and Organization; Individual and Social Duties; Practical Methods. *Mon., Wed., Fri., 4.00.* PROFESSOR WOODBRIDGE.

HOMILETICS

PROFESSOR LEONARD

The course in Homiletics covers two years. The first year [English 27†] is devoted to the sermon as a literary production; analysis of portions of the Old and the New Testament, with a view to the homiletical use of texts. In the main, the work of this year is given to the theoretical part of the study.

The second year is devoted to the study of printed sermons, with special reference to form, expression, and the character and range of illustration; the composition and delivery of sermons, which are criticised by the class and by the professor; lectures on invention and arrangement of material, style in spoken discourse, helps in sermon preparation from a study of character and literature, the homiletic habit, personality in preaching.

* See page 72.
† See page 60.

In the Homiletical Seminary the subjects vary from year to year. The object is the discussion of different phases of the teaching. Each student presents a careful study of at least one aspect of the general subject, and leads in the discussion.

SUBJECTS

1. The Idea and Structure of the Sermon; Homiletical Analysis; Studies in Plans. *Tu., Th., Sat., 11.45.* PROFESSOR LEONARD.

2. The Composition and Delivery of Sermons; Lectures on Preaching. *Tu., Th., Sat., 9.45.* PROFESSOR LEONARD.

PASTORAL THEOLOGY

PROFESSOR LEONARD

The course in Pastoral Theology considers the minister as organizer and director of church activities. The subjects discussed relate to the more private and personal care which the minister exercises toward the members of a single congregation, or toward others whom he may be expected to influence. Careful study is invited to the qualifications — spiritual, mental, social — of a good pastor, the methods of forming and strengthening a parish; the conduct of public worship, and the mode of conducting the special services of the church,—baptism, confirmation, the Lord's Supper, marriage, and the burial of the dead. The object of this course is the practical preparation of the pastor for his sacred duties. Seminaries are held from time to time for the free discussion of pastoral methods and personal religious work, with special reference to concrete questions of immediate interest to the young minister.

SUBJECT

1. The Pastor's Personal Qualifications and Duties; the Pastor as a Leader of Thought and Worship; the Organized Work of the Parish; the Special Offices of Religion; Actual Work in Missions and Charities. *Tu., Th., Sat., 8.45.* (S) PROFESSOR LEONARD.

Summary

A synopsis of the Course of Study (for one who enters with Greek and Latin) leading to A.B. in four years, and B.D. in one more year, embracing all the regular requirements for both degrees :—

FRESHMAN YEAR

Subject	Instructor	Time
Mathematics 1*a*	Ransom	Tu. Th. Sat. 8.45
German 1	Reed	Mon. Wed. Fri. 9.45
Greek 2	Wade	Mon. Wed. Fri. 2.00
Physics 1	Dolbear	Mon. Wed. Fri. 10.45
Old Testament 1 [History 11]	Harmon	Mon. Wed. Fri. 4.00
English 1 and 2	Maulsby and Whittemore	Tu. Th. Sat. 10.45
Oratory 1	Maulsby	Th. 2.00
Physical Training	Stroud	

SOPHOMORE YEAR

Subject	Instructor	Time
Old Testament 3 [Hebrew 1]	Woodbridge	Tu. Th. Sat. 11.45
German 3 (or 2)	Fay (or Reed)	Tu. Th. Sat. (or Mon. Wed. Fri.) 8.45
English 5	Shipman	Tu. Th. 3.00 (F)
Philosophy 1 (or 2) and 5	Cushman	Tu. Th. Sat. 9.45
English 12	Maulsby	Mon. Wed. Fri. 2.00
New Testament 1 [History 12]	Harmon	Mon. Wed. Fri. 3.00 (F)
History 1	Evans	Mon. Wed. Fri. 10.45
Oratory 3	Maulsby	
Physical Training	Stroud	

JUNIOR YEAR

SUBJECT	INSTRUCTOR	TIME
Biology 1	Kingsley and Lambert	Tu. Th. 11.45, 2.00, 3.00
Philosophy 3 and 4	Shipman	Tu. Th. Sat. 10.45
English 17 and 18	Maulsby and Whittemore	Mon. Wed. Fri. 8.45
History of Religions 2 [History 14]	Woodbridge and Knight	Tu. Th. Sat. 9.45
History 7 (or 2, or 3)	Evans (or Bolles)	Mon. Wed. Fri. 3. (S) (or 8.45 or 10.45 for the year)
Public Law and Administration 1	Evans	Mon. Wed. Fri. 11.45 (F)
Old Testament 2	Woodbridge	Mon. Wed. Fri. 9.45 (F)
New Testament 2	Harmon	Mon. Wed. Fri. 9.45 (S)

SENIOR YEAR

SUBJECT	INSTRUCTOR	TIME
Political Science 1	Metcalf	Tu. Th. Sat. 10.45
Public Law and Administration 4, 5, or 6	Evans	Mon. Wed. Fri. 8.45 (F)
Old Testament 5	Woodbridge	Tu. Th. Sat. 8.45
New Testament 3	Harmon	Mon. Wed. Fri. 11.45
Ethics 1 (Philosophy 6)	Tousey	Mon. Wed. Fri. 10.45 (F)
Ethics 2 (Philosophy 7)	Tousey	Tu. Th. Sat. 10.45 (S)
Systematic Theology 1	Knight	Mon. Wed. Fri. 4.00 (S)
Homiletics 1 [English 27]	Leonard	Tu. Th. Sat. 11.45

FIFTH YEAR

SUBJECT	INSTRUCTOR	TIME
Political Science 2	Metcalf	Mon. Wed. Fri. 9.45
History of Religions 1 [History 13]	Knight	Tu. Th. Sat. 8.45 (F)
Philosophy of Theism [Philosophy 15]	Tousey	Mon. Wed. Fri. 11.45
Systematic Theology 2 [Philosophy 16]	Knight	Tu. Th. Sat. 11.45
Applied Christianity	Woodbridge	Mon. Wed. Fri. 4.00
Pastoral Theology	Leonard	Tu. Th. Sat. 8.45 (S)
Homiletics 2	Leonard	Tu. Th. Sat. 9.45

General Information

In addition to the information given on pages 169 to 185, the following is of interest to Divinity students.

RELIGIOUS OBSERVANCES

A religious service is held in the chapel in Miner Hall daily (except Saturdays and Sundays) at 1.45 P.M. Attendance is voluntary.

SUPPLEMENTARY LECTURES

Lectures, which bear upon the general work of the Christian ministry, and upon special subjects of study, are given at intervals throughout the year by well-known clergymen of the vicinity.

The most noted divines of New England officiate every Sunday within easy distance, and may be studied by the student in respect to their teachings and their methods. It is the policy of the school to encourage the judicious use of these important instrumentalities of culture.

LICENSE TO PREACH

The regular time for applying for licensure is near the close of the first half of the Senior Year. Before that time the members of the Divinity School are not allowed to preach.

BUILDINGS FOR THE USE OF THE DIVINITY SCHOOL

Miner Theological Hall contains eight large, well-lighted, and well-ventilated lecture-rooms, and a special room for the meetings of the Faculty. Until other buildings are provided, one of the rooms in this hall is used for the Historical and Reference Libraries, and one is appropriately furnished for the religious services of the school. A third room in the same hall is furnished as a parlor, and is known as the Maria Miner Reception Room.

Paige Hall, the dormitory of the Divinity School, contains thirty-six single rooms, heated by steam and lighted by gas. Each room is carpeted, and provided with all necessary furniture—except sheets, blankets, pillow-cases, and towels.

EXPENSES AND PECUNIARY AID

Students in the Divinity School are charged *one hundred dollars* annually for tuition. This charge includes the privilege of occupying a room in Paige Hall, and provision for heating and caring for it.

The following scholarships are assigned exclusively to Divinity students; certain prizes are also available under conditions, especially as described on pages 181, 183 of this catalogue.

The General Convention of Universalists aids students by free scholarships, not exceeding one hundred and twenty-five dollars a year to any one student, subject always to the recommendation of the Faculty of the Divinity School. Those students, also, who are in the regular course are permitted to preach, under the direction of the Faculty, during the year-and-a-half preceding their graduation. In this way they may add to their pecuniary resources.

THE GREENWOOD SCHOLARSHIP.—The income of one thousand dollars, bequeathed by the late Mrs. Eliza M. Greenwood, of Malden, is given in prizes to members of the Divinity School, for excellence in the Department of Oratory.

THE DOCKSTADER SCHOLARSHIP.—The income of ten thousand dollars, given by George A. Dockstader, of New York, is appropriated to the aid of needy and worthy students.

The following scholarships amount to fifty dollars each:—

THE WHITTEN SCHOLARSHIP.—Founded by Mrs. Maria F. Whitten, of Cambridge.

THE HOLT SCHOLARSHIP.—Founded by Miss Celia Holt, of Stafford, Conn.

THE HENRY L. BALLOU SCHOLARSHIP.—Founded by Susan Ballou, of Woonsocket, R. I.

TWO BRADLEE SCHOLARSHIPS.—Founded by the late Caleb D. Bradlee, D.D., of Brookline.

TWO GOLDTHWAITE SCHOLARSHIPS.—Founded by the late Willard Goldthwaite, of Salem.

THE SARAH ELIZABETH PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of Brooklyn, N. Y.

TWO LUCIUS R. PAIGE SCHOLARSHIPS.—Founded by the late Lucius R. Paige, D.D., of Cambridge, Mass.

TWO ANN M. PAIGE SCHOLARSHIPS.—Founded by the late Ann M. Paige, wife of the late Rev. Lucius R. Paige, of Cambridge, Mass.

The income of five hundred dollars, given by REV. JOHN VANNEVAR, is used in the purchase of books for the Department of Homiletics.

THE MEDICAL SCHOOL

Faculty of the Medical School*

ELMER HEWITT CAPEN, A.M., D.D., LL.D. . . . . Tufts College
PRESIDENT

HAROLD WILLIAMS, A.B., M.D. . . . . 528 Beacon St., Boston
DEAN, *and Professor of the Theory and Practice of Medicine*

CHARLES PAINE THAYER, A.M., M.D.
Tufts College Medical School
SECRETARY, *and Professor of General, Descriptive, and Applied Anatomy*

HENRY WATSON DUDLEY, M.D. . . . . Abington
Professor of Pathology, Emeritus, and Lecturer on Legal Medicine

JOHN LEWIS HILDRETH, A.M., M.D., LL.D.
Professor of Clinical Medicine, Emeritus 14 Garden St., Cambridge

ERNEST WATSON CUSHING, A.B., M.D., LL.D.
168 Newbury St., Boston
Professor of Abdominal Surgery and Gynaecology

HENRY JABES BARNES, M.D. . . . . 429 Beacon St., Boston
Professor of Hygiene

EDWARD OSGOOD OTIS, A.B., M.D. . . . 381 Beacon St., Boston
Professor of Pulmonary Diseases and Climatology

CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree
Professor of General Chemistry

JAMES SULLIVAN HOWE, M.D. . . . . 15 Charles St., Boston
Professor of Dermatology

MORTON PRINCE, A.B., M.D. . . . . 458 Beacon St., Boston
Professor of Diseases of the Nervous System

HENRY BECKLES CHANDLER, C.M., M.D. 34½ Beacon St., Boston
Professor of Ophthalmology

FREDERIC MELANCTHON BRIGGS, A.B., M.D.
Professor of Clinical Surgery 31 Massachusetts Ave., Boston

FRANK GEORGE WHEATLEY, A.M., M.D. . . . . North Abington
Professor of Materia Medica and Therapeutics

* The names of the Faculty of Medicine, after the President, the Dean, and the Secretary, are arranged in groups: Professors, Assistant Professors, Instructors, and Assistants. Within each group the order is that of academic seniority.

GEORGE ANDREW BATES, D.D.S., M.S. . . . . Auburndale
Professor of Histology

EDWARD BINNEY LANE, A.B., M.D. . Austin St., New Dorchester
Professor of Mental Diseases

GEORGE HAMLIN WASHBURN, A.B., M.D.
Professor of Obstetrics 377 Marlborough St., Boston

ARTHUR EVERETT AUSTIN, A.B., M.D.
163 Suffolk Road, Chestnut Hill
Professor of Medical Chemistry and Toxicology

HORACE DAVID ARNOLD, A.B., M.D. . . 427 Beacon St., Boston
Professor of Clinical Medicine

GEORGE WARTON KAAN, M.D. . . . . 419 Boylston St., Boston
Professor of Clinical Gynaecology

EDWARD MAVERICK PLUMMER, M.D. 5 Adams St., Charlestown
Professor of Otology

TIMOTHY LEARY, M.D. . . . . 20 Sunset St., Roxbury
Professor of Pathology and Bacteriology

EUGENE THAYER, A.M., M.D. . . . 2683 Washington St., Roxbury
Demonstrator of Anatomy

HERBERT WARREN WHITE, M.D. . 151 Humboldt Ave., Roxbury
Assistant Professor of Theory and Practice of Medicine

GARDNER WELD ALLEN, A.B., M.D. 419 Boylston St., Boston
Assistant Professor of Genito-Urinary Surgery

HOWARD SUMNER DEARING, A.M., M.D. 607 Tremont St., Boston
Assistant Professor of Clinical Medicine

WILLIAM ELISHA CHENERY, A.B., M.D.
Assistant Professor of Laryngology 222 Huntington Ave., Boston

JOHN LINCOLN AMES, A.B., M.D. . . . . 72 Chestnut St., Boston
Assistant Professor of Clinical Medicine.

EDMUND CHANNING STOWELL, A.B., M.D.
Assistant Professor of Children's Diseases 69 Adams St., Dorchester

GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D.
Assistant Professor of Physiology Garrison Hall, Garrison St., Boston

CHARLES FAIRBANK PAINTER, A.B., M.D.
Assistant Professor of Orthopedic Surgery 86 Bay State Road, Boston

FRANK LEE DRUMMOND RUST, M.D. . 543 Boylston St., Boston
Assistant Professor of Ophthalmology

OTHER INSTRUCTORS

WALTER ELMORE FERNALD, M.D. . . . . Waverley
Clinical Lecturer in Mental Diseases

EDWARD LAMBERT TWOMBLY, A.B., M.D.
Instructor in Clinical Gynaecology 483 Beacon St., Boston

CHARLES MELVILLE WHITNEY, M.D. . 591 Tremont St., Boston
Instructor in Genito-Urinary Diseases

KARL AUGUST HOCH, M.D. . . . . McLean Hospital, Waverley
Instructor in Neuro-Pathology

JOHN JENKS THOMAS, A.M., M.D. . . 88 Bay State Road, Boston
Instructor in Neurology

ROBERT WORTHINGTON HASTINGS, A.M., M.D.
45 Kilsyth Road, Brookline
Instructor in Theory and Practice of Medicine and Assistant in Pediatrics

RICHARD FITCH CHASE, M.D. . . . 246 Huntington Ave., Boston
Instructor in Clinical Medicine and Lecturer on Gastro-Intestinal Diseases

JOHN NELSON COOLIDGE, A.B., M.D. 409 Marlborough St., Boston
Instructor in Clinical Medicine

THEODORE CHARLES ERB, M.D. . . 159 St. Botolph St., Boston
Instructor in Obstetrics

ARTHUR WILLARD FAIRBANKS, M.D.
Instructor in Clinical Medicine 362 Commonwealth Ave., Boston

CHARLES DAVISON KNOWLTON, M.D. 574 Warren St., Roxbury
Instructor in Pathology and Bacteriology

HORACE SHERIDAN MORAN, A.B., M.D. . 86 Warren St., Roxbury
Instructor in Obstetrics

FREDERIC WARREN PEARL, A.B., M.D.
Hotel Vendome, Commonwealth Ave., Boston
Instructor in Operative and Clinical Surgery and Assistant Demonstrator of Anatomy

FRANCIS DENNIS DONOGHUE, M.D. 409 Marlborough St., Boston
Instructor in Clinical Surgery

EDWARD ELIPHALET THORPE, M.D. . . 711 Boylston St., Boston
Instructor in Medical Chemistry

CHARLES BALFOUR DARLING, A.B., M.D.
Instructor in Clinical Gynaecology 27 Rockville Park, Roxbury

FRANK PERCIVAL WILLIAMS, M.D. . . 419 Boylston St., Boston
Instructor in Rectal Diseases

JOHN INNES FRENCH, M.D. . . . . 2A Park St., Boston
Instructor in Materia Medica and Therapeutics and Assistant in Clinical Medicine

WILLIAM HERBERT GRANT, M.D. . . . 845 Boylston St., Boston
Instructor in Clinical Gynaecology

RALPH CLINTON LARRABEE, A.B., M.D. . 912 Beacon St., Boston
Instructor in Clinical Medicine and Haematology

JOHN SHEPARD MAY, M.D. . . . . 219 Warren St., Roxbury
Instructor in Obstetrics and Assistant in Clinical Medicine

ELIZABETH ANGELA RILEY, M.D. . . . . 483 Beacon St., Boston
Instructor in Gynaecology and Abdominal Surgery

WILLIAM LITTLEFIELD RIPLEY, M.D. . . . . Newton
Instructor in Physiology

FREDERICK FINCH STRONG, M.D. . 178 Huntington Ave., Boston
Instructor in Electro-Therapeutics

JAMES WILLIAM HINCKLEY, M.D. . . 18 Huntington Ave., Boston
Instructor in Obstetrics

HARRY HOMER GERMAIN, M.D. . . . . 4 Arlington St., Boston
Instructor in Clinical Surgery and Assistant in Anatomy

ELWOOD TRACY EASTON, M.D. . . . . 871 Boylston St., Boston
Instructor in Ophthalmology

LUTHER GORDON PAUL, M.D. . . . . 657 Boylston St., Boston
Instructor in Clinical Surgery and Assistant in Anatomy

HARRY CALDWELL PARKER, M.D. 317 Marlborough St., Boston
Instructor in Ophthalmology

RICHARD FROTHINGHAM O'NEIL, M.D. . 379 Beacon St., Boston
Demonstrator of Surgical Apparatus and Bandaging

I. EUGENE R. REID, M.B., C.M. . 138 Chestnut Ave., Jamaica Plain
Assistant Demonstrator of Anatomy

WILLIAM EASTMAN FAY, A.B., M.D.
Assistant in Clinical Medicine 366 Commonwealth Ave., Boston

ARTHUR PATTERSON CHADBOURN, A.B., M.D.
Assistant in Clinical Medicine 225 Marlborough St., Boston

GEORGE ARTHUR WEBSTER, M.D. . . . 419 Boylston St., Boston
Assistant in Anatomy

CHARLES HENRY WINN, A.B., M.D. . . 1474 Tremont St., Boston
Assistant in Clinical Medicine

EDWARD ALLEN PEASE, M.D. . . . . 483 Beacon St., Boston
Assistant in Clinical Gynaecology

FRANCIS JOSEPH WELLER, A.B., M.D. . . . . Hotel Nottingham
Assistant in Otology

ELMOND ARTHUR BURNHAM, A.B., M.D.
Assistant in Clinical Medicine 154 Huntington Ave., Boston

ROBERT MICHAEL MERRICK, M.D. . . 15 Adams St., Dorchester
Assistant in Clinical Medicine

HENRY FOWLER RANSFORD WATTS, M.D.
Assistant in Clinical Medicine 6 Monadnock St., Boston

LEON EDWARD WHITE, A.B., M.D. . . . 543 Boylston St., Boston
Assistant in Otology

JOHN PETER TREANOR, M.D. . . . . 3 Howes St., Dorchester
Assistant in Clinical Medicine

WILLIAM GRAY ADAMS, M.D. . . . . Hyde Park
Assistant in Anatomy

FREDERICK WINSLOW STETSON, A.B., M.D.
Assistant in Clinical Medicine 637 Dudley St., Boston

THOMAS JAMES O'BRIEN, PH.G., M.D. 1470 Tremont St., Roxbury
Assistant in Clinical Medicine

JOSEPH HENRY SAUNDERS, A.B., M.D. 217 Harvard St., Brookline
Assistant in Clinical Medicine

ADELAIDE OLGA CUSHING-LEARY, M.D. 20 Sunset St., Roxbury
Assistant in Pathology and Bacteriology

ARTHUR THORNTON LEGG, M.D. . . . . 535 Beacon St., Boston
Assistant in Orthopedics

JOHN SCOTT McLEOD, M.D. . . . . 113 Warren St., Roxbury
Assistant in Anatomy

WILLIS JOHNSON MIDDLETON, M.D. . . . . Quincy
Assistant in Anatomy

WALTER FREEMAN NOLEN, M.D. . . . . 535 Beacon St., Boston
Assistant in Anatomy

ALONZO KINGMAN PAINE, M.D. . . . . 43 Tremont St., Boston
Prosector in Anatomy

Laboratory Assistants

CARL R. O'BRIEN . . . . . Chelsea
G. R. CALLENDER . . . . . Northfield
Anatomy

EDISON W. BROWN . . . . . Dorchester
JOHN M. KELLEY . . . . . Dorchester
LEON S. A. MEDALIA . . . . . Boston
Pathology and Bacteriology

LEO T. MYLES . . . . . Cambridge
FRANKLIN WELLES . . . . . Boston
GUY M. WINSLOW . . . . . Newton
Histology

SYDNEY C. HARDWICK . . . . . Quincy
RALPH W. E. COLE . . . . . Franklin Falls, N. H.
ELWIN H. WELLS . . . . . Rumney, N. H.
FRANK W. WHITE . . . . . Arlington
Physiology

W. DACRE WALKER . . . . . Peabody
W. W. KINGSBURY . . . . . Walpole, N. H.
FRANK W. ROGERS . . . . . Dedham
CHARLES H. YOUNG . . . . . Woburn
MYRON L. MARR, S.B. . . . . Dorchester
Medical Chemistry

JOSEPH A. MEHAN . . . . . Lowell
CUSHMAN DAY . . . . . Boston
DANIEL E. KEEFE . . . . . Athol
ARDENNE A. STOTT . . . . . Reading
ERNEST D. HATCH . . . . . Boston
General Chemistry

JOHN J. GIBBONS . . . . . Clinton
WILLIAM A. DUTCHER . . . . . Boston
Pharmacology

Bursar

HERBERT T. BROWN . . . . . Tufts College

STANDING COMMITTEES OF THE MEDICAL SCHOOL

ADMINISTRATION.— The President, the Dean, the Secretary, Drs. Wheatley and Leary

CATALOGUE.—Drs. Briggs, Bates, and Dearborn

NOMINATIONS.—Drs. Wheatley and Arnold

LIBRARY.—Drs. Otis, Howe, and Cushing

COURSE OF INSTRUCTION.—Drs. Leary, Arnold, Briggs, and Washburn

ADMISSION.—Drs. Leary, Dearborn, and Bates

DISPENSARY.—Drs. Briggs and Arnold

The College Dispensary Staff

DEPARTMENT OF MEDICINE

Chief-of-Staff

HORACE D. ARNOLD, M.D., *Professor of Clinical Medicine*

Associate

HOWARD S. DEARING, M.D., *Assistant Professor of Clinical Medicine*

Physicians

JOSEPH H. SAUNDERS, M.D. ANNIE S. K. PATCH, M.D.
FREDERIC W. STETSON, M.D. I. EUGENE R. REID, M.D.
HORATIO S. CARD, M.D.

DEPARTMENT OF SURGERY

Chief-of-Staff

FREDERIC M. BRIGGS, M.D., *Professor of Clinical Surgery*

Surgeons

FRANCIS D. DONOGHUE, M.D. WILLIAM G. ADAMS, M.D.
FREDERICK W. PEARL, M.D. HAROLD W. SMITH, M.D.
WILLIAM C. PETERS, M.D.

DEPARTMENT OF GYNAECOLOGY

Chief-of-Staff

ERNEST W. CUSHING, M.D., *Professor of Gynaecology*

Associate

GEORGE W. KAAN, M.D., *Professor of Clinical Gynaecology*

Gynaecologists

EDWARD L. TWOMBLY, M.D. ELIZABETH A. RILEY, M.D.
CHARLES B. DARLING, M.D.

DEPARTMENT OF LARYNGOLOGY

Chief-of-Staff

WILLIAM E. CHENERY, M.D., *Assistant Professor of Laryngology*

Laryngologists

ALFRED A. AMADON, M.D. FREDERIC D. LYON, M.D.
GEORGE S. McPHERSON, M.D. FRANK E. HASKINS, M.D.

Pharmacist

ELBERN T. BOWERS, PH.G., M.D.

Tufts College Medical School

The Tufts College Medical School was established in Boston in 1893. Women are admitted upon the same terms as men. Since its establishment its rapid growth is believed to be without precedent in the history of American medical schools. Three times it has been found necessary to change the location of the School to provide larger laboratory facilities for the constantly increasing number of students. In 1900 it was voted by the Trustees to provide a new building for the combined Medical and Dental departments. Land was purchased upon the corners of Huntington and Rogers avenues and Courtland and Drisko streets, and ground was broken for the new medical school early in the autumn. This building is now completed and is occupied by the combined schools. It is constructed of Jonesport red granite and brick, with terra cotta trimmings. It contains nearly an acre-and-a-half of floor space; is heated and ventilated throughout by both the direct and indirect systems, and is lighted by electricity. Modern improvements have been introduced in all departments, and no expense has been spared to make it the best arranged as well as the largest structure of its kind in New England. The building can be reached by all Huntington Avenue cars except the Cross Town and Cambridge lines.

Departments of Instruction

ANATOMY

The course in anatomy comprises, for the Freshman year, lectures, recitations, and demonstrations, illustrated by plates, models, and dissections. The relations of parts and organs in the various regions of the body are demonstrated, and their

importance in various operations is emphasized and explained. In the dissecting-room the student is required to carry on his work with neatness and precision, under the supervision of the demonstrator, thus acquiring that familiarity with the use of instruments which is essential to the practitioner. The new dissecting-room is fitted with all modern conveniences, and is under the personal supervision of the Professor of Anatomy. The dissections are made under the direction of the Demonstrator of Anatomy or his assistants, who will give all necessary aid and advice. Abundance of material is furnished students at cost.

PHYSIOLOGY

The course in physiology is given throughout the latter half of the first year. It constitutes half of the entire work required of the student during that period. The course consists of four recitations, two lectures, six hours of laboratory work, and three conferences for every student, each week, together with the preparation of a technical written paper, and extra demonstrations.

In the recitations, familiarity with the subject matter of Stewart's "Manual of Physiology," and with the Syllabus, is required. The lectures set forth the principles of general physiology, and suggest some of its relations to the allied sciences, especially anatomy. In the laboratory the student has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function. A strict practical examination may be held at the end of the year in the laboratory. The conferences give volunteers opportunity to become familiar with the literature on important interesting physiological topics, which are then presented briefly in written reports and freely discussed by the class. Record both of the attendance and of the quality of the work done in the laboratory and recitation-room will be kept, and, with the conference, will *largely* determine the standing of the student in the class. In addition a three-hour written examination covering the entire work of the year is held at the

completion of the work, besides important subsidiary written examinations, monthly.

By thus concentrating attention upon physiology during an adequate period it is hoped that at least a thorough and indispensable grounding in the functions of the normal human organism will be acquired.

Advanced work in physiology will be provided for competent students, by special arrangement with the head of the department. Work in this department is also offered to candidates for the degree of Master of Arts. The constant aim is to adapt the work of each student both to his needs and to his capabilities.

GENERAL CHEMISTRY

The course in general chemistry consists of descriptive chemistry and qualitative analysis, with so much of theoretical chemistry as is necessary for a proper understanding of the subject.

The classification of the carbon compounds also is taken up at considerable length, and special reference is made to those which are of interest in the study of medicine. The instruction is by lectures, recitations, and practical work by the students in the laboratory. There are five lectures, two recitations, and six or more hours of laboratory work for each student, every week. Much attention is given to qualitative analysis for the sake of the valuable training which it imparts, and the knowledge of chemistry which is incidentally gained. The importance of this knowledge is evinced by the fact that it is the only non-professional subject which is required in most medical schools. The aim is to impart such information in chemistry as is necessary to the intelligent physician. At the same time any who wish to pursue the study further than is required of every graduate may do so by special arrangement.

Certificates of satisfactory completion of courses 1, 2, and 3, in Chemistry, in the academic department of Tufts College, will be accepted in the Medical School in place of General Chemistry. It is intended to make this course lead directly to

the Medical Chemistry of the second year, and in the near future to have it include much of the preliminary work of that course.

HISTOLOGY

The work in histology covers the first half of the school year, and is both didactic and practical. The practical work in the laboratory is emphasized. Here the student comes into the most intimate relation with the elements of the body, the legitimate objects of his study. He learns to use the microscope and to manipulate sections. Being required to draw what he sees, he forms a mental picture of the objects of study which he never forgets.

The department aims to bring before the student the latest utterance of the best authorities, and to present the subject from the standpoint of the medical student. It must be obvious that histology, dealing as it does with the tissue elements of the body in their normal condition, is vitally important in the study of pathology, when it is understood that it is morbid changes in these elements which constitute pathological conditions. The student's future study of pathology is kept constantly in mind, and the teaching of the department has a direct bearing upon that end.

Embryology will be presented so far as to give the student a knowledge of the origin of the tissues in the embryo, and to furnish him with an understanding of such conditions as will aid him in the study of obstetrics. The department is furnished with microscopes, the use of which, on payment of a small fee, will be afforded to such as are unable to furnish instruments of their own.

Written exercises and recitations will form a part of the course.

MATERIA MEDICA AND THERAPEUTICS

Instruction in therapeutics consists of lectures, recitations, and laboratory exercises. Especial attention is given to the physiological action of drugs in its relation to their therapeuti-

cal application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory course is designed to familiarize the student with all medicinal preparations and processes, and consists of exercises in which the class in sections is led to this result practically.

Prescription writing and the metric system will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

MEDICAL CHEMISTRY

Medical chemistry, in its two departments, physiological and clinical chemistry, is taught in lectures, quizzes, and practical work in the laboratory. Every week there are three lectures and three quizzes of one hour each, besides sixteen hours required in the laboratory. The students first acquire a familiarity with proteins, carbohydrates, and fats,—the bases of foodstuffs and of all animal tissue,—and then a thorough knowledge of salivary, stomachic, and pancreatic digestion. Then follows the examination of blood, milk, gastric contents, urine, bile, feces, normal and abnormal. In all this work the practical and clinical bearings which most concern a physician are kept constantly in the foreground.

PATHOLOGY

The work in pathology and bacteriology will occupy the attention of the students during the second half of the second year. The instruction in pathology will consist of lectures, recitations, demonstrations, and practical laboratory work. It will be the aim to develop in the student a thorough knowledge of the causes, course, and results of pathological processes. Daily lectures (five times a week) will be supplemented by daily recitations, based upon a syllabus covering the subjects of general pathology and special pathology.

Demonstrations of gross pathological specimens, obtained from operations and autopsies at the Boston City Hospital, the Massachusetts General Hospital, and other institutions, will

be held frequently, as material is obtained. The supply of fresh material is very large, and it is usually possible to illustrate all of the common disease processes and many of the rare lesions, during the time when the class is at work. The work will include active participation by the students, who will be expected to section, study, and report upon specimens. Instruction in autopsy technique will be given in the amphitheatre of the school.

The work in pathological histology will include three hour-exercises daily, five times a week. Students will mount and make drawings of sections obtained from human and experimental lesions, comprehending all of the important subjects of general and special pathology. Considerable attention will be paid to surgical pathology. Preserved gross specimens illustrating the lesions studied will be demonstrated in connection with the laboratory exercises.

Written recitations will be held, without notice, at irregular intervals throughout the term. The standard attained by the student in these exercises will influence his final mark in the subject. Final examinations will be held at the end of the year, three hours of written and two hours of practical work. A report on gross specimens may be included.

Microscopes will be loaned to students for a small fee.

BACTERIOLOGY

Bacteriology is taught as a companion study with pathology. As infectious processes are taken up, the bacterial causes are studied in connection with the pathology of the diseases which they produce, in such a way that a comprehensive view of the cause and effect may be obtained. Attention is paid to the technical details of laboratory work. The methods of bacterial action, the elaboration of toxines, the subject of immunity, and the important bearings of asepsis, antisepsis, and disinfection are especially emphasized. Particular attention is also paid to all practical bacteriological tests used in medicine.

The bacteriological laboratory presents adequate facilities for the intelligent demonstration of this subject. In addition

to the usual laboratory work, facilities are afforded students for individual work. In connection with the demonstration of gross pathological specimens, a study of bacteria present is made, both by smear and culture. The recitations in this subject will include both oral and written exercises, and practical examinations will be held throughout the year.

The final examination will consist of two hours of written and one hour of practical work. The practical examination will consist of the examination of an unknown specimen, requiring the application of a bacteriological test of clinical value.

THEORY AND PRACTICE OF MEDICINE

The work prescribed in the department of general medicine has been carefully planned. As the studies of the second year are intended to prepare the student for the study of the theory and practice of medicine, so is this course intended to prepare for the clinical courses of the fourth year. To this end a systematic series of lectures is offered, including such general diseases as are not considered in the special courses. Two hours a week are devoted to these lectures. They comprise a detailed description of each of the diseases under consideration. The diseases are discussed upon the uniform plan of a description of the affection, its synonyms, history, cause, pathological changes, symptoms, complications, diagnosis, prognosis, prevention, and treatment. Supplementary to these lectures, a quiz-class, also two hours a week, is held. By such thorough and systematic study of the diseases he is to meet in the clinical work of the fourth year, the student is prepared to appreciate in the fullest degree the varying phenomena of daily practice.

SURGERY

Instruction in surgery consists of two lectures weekly, on the general principles and practice of surgery, one recitation every week from the text-book, and two one-hour examinations, in addition to the final examination, at intervals during the year. Students of the Junior class, in small sections, attend the various surgical clinics of the school, preparatory to the regular clinical work of the Senior year. They are expected to attend the operations

at the Boston City Hospital every Friday morning, the clinical lectures at the Boston Dispensary every Thursday morning, and are invited to be present at the clinical conferences of the Senior class, but are not allowed to take active part in the discussions. All students who have not already taken the course in bandaging and apparatus must make arrangements with the demonstrator to take this course before the termination of their Junior year. At some time after the course in bandaging and surgical technique, but before graduation, each student must present a certificate stating that he has served satisfactorily as surgical dresser for at least one month in some institution approved by the Faculty.

OBSTETRICS

Instruction in obstetrics consists of lectures, recitations, conferences, and clinical teaching. Lectures are illustrated by plates and the use of the manikin. Each student is required to care for at least two cases (clinical instruction being given with one of these), attending them throughout convalescence, and handing in a written report. Some of these reports will be read before the class, and subjected to discussion and criticism by class and instructor.

PULMONARY DISEASES AND CLIMATOLOGY

A chair of pulmonary diseases and climatology has been established, and Dr. Edward O. Otis, Physician to the Free Home for Consumptives and the tuberculosis department of the Boston Dispensary, formerly president of the American Climatological Association, has been elected as the head of this department. Medical climatology will receive special attention in relation to the climatic treatment of tuberculosis. The methods of sanatorium treatment will be discussed, and one or more sanatoriums visited during the year.

A limited number of students of the fourth year who desire to assist at the tuberculosis clinic of the Boston Dispensary will have opportunity to do so, and should apply to Dr. Otis. In this department special attention is devoted to pulmonary tuberculosis, concerning which instruction is given, both by didactic

and clinical lectures, to the students of the third and fourth years. Special clinical instruction, with opportunities for the physical examinations of patients, will be given to the students of the third and fourth classes, in small sections, at the clinic for pulmonary diseases in connection with the Boston Dispensary, and at the Free Home for Consumptives. The detection, treatment, and prevention of pulmonary tuberculosis will be thoroughly studied in this class.

GYNAECOLOGY

Instruction in gynaecology is given both by lectures and clinical teaching. Lectures are given to the third-year students twice a week during the second term. Once a week a quiz is held on the lectures.

DISEASES OF CHILDREN

Instruction in the diseases of children consists of clinics, lectures, clinical conferences, quizzes, and visits to sick children at their homes. The clinical advantages offered to students in this department are great: examples of nearly all the affections of infancy and childhood are shown to the students, including such rare diseases as are seldom seen outside the clinics of a large city. A course of didactic and clinical lectures, including the anatomy and hygiene of infancy and children, is given, and also special clinical instruction in the auscultation and percussion of children, and in the contagious diseases. The members of the class are received in small sections.

HYGIENE

Freshmen are taught elementary hygiene, and the benefits derived from wholesome associations, during the first half of the year.

The third year, the course in hygiene includes public sanitation. Water supplies, sewerage systems, house and school construction, municipal sanitation, industrial occupations, preventable diseases, vital statistics, and sanitary codes are among the subjects of the lectures.

One of the objects of this study is to supply qualified candidates for Public Health Offices.

CLINICAL MEDICINE

The aim of the work in clinical medicine is to give the student a practical acquaintance with disease.

Normal auscultation and percussion will be taught in the latter part of the second year. During the third year the work in auscultation and percussion will be extended to the study of abnormal conditions, and clinical opportunities will be afforded the student for gaining experience in the physical examination of patients. Assistant Professor Dearing will give a lecture twice a week in medical diagnosis. A course in haematology, including lectures and practical work, will be given by Dr. Strong.

During the fourth year there will be four regular exercises weekly, besides numerous clinics. Two clinical lectures are given weekly in the amphitheatre of the Boston City Hospital, one by Professor Arnold and one by Assistant Professor Ames. Patients from the hospital wards will be shown, and the diagnosis and treatment of these cases will be discussed. Third-year students will be admitted to these exercises.

The third weekly exercise will be held at the school by Professor Arnold. The work will consist partly of didactic lcetures supplementing the clinical lectures at the hospital, and partly of the discussion of clinical cases, in which both instructor and students take part. A number of these lectures will be devoted to the consideration of life insurance and other aspects of what may be termed mercantile medicine. Assistant Professor Dearing will also lecture on military medicine, as part of this course.

The fourth exercise will be a clinical conference, one hour a week, under the charge of Assistant Professor Ames. At this conference reports of cases written by the fourth-year students will be read, discussed, and criticised by the board of instruction and by the students. The cases to be reported will be assigned to the students from the various clinics. Third-year students will also be admitted to the clinical conferences. As part of

this course Dr. Chase will give a series of lectures on diseases of the stomach.

Clinical exercises are held at the following institutions: Boston City Hospital, Carney Hospital, St. Elizabeth's Hospital, Boston Dispensary, and the Tufts College Medical School Dispensary. The clinical exercises given by Professor Otis and his assistants in connection with pulmonary diseases constitute an important part of the instruction in clinical medicine. This work comes in the third and fourth years, with clinics at the Boston Dispensary and the Free Home for Consumptives.

Another important feature of the instruction consists of visits made by the students with the district physicians of the Boston Dispensary. Here the students see cases of sickness in the home. They are not only instructed in the care of patients under these conditions, but have opportunities for following cases through every aspect of the disease. They will be required to make a special study of certain of these cases, and their written reports will furnish much of the material for the clinical conferences.

Examinations are held as follows:—on normal auscultation and percussion at the end of the second year; two one-hour examinations in the third year, one on pulmonary diseases and one on medical diagnosis (including haematology); and a final three-hour examination at the end of the fourth year. The marks in clinical medicine will be based on the practical work throughout the course and on the reports of cases, as well as on the written examinations.

CLINICAL AND OPERATIVE SURGERY

The work in clinical and operative surgery consists of lectures, clinical work, conferences, and operative work on the cadaver. There is one clinical lecture a week throughout the school year, at which cases are presented, described, examined, and fully discussed. These lectures are arranged to give a systematic course in the surgery of special organs and portions of the body, and are demonstrated from the actual case, thus continu-

ing and completing the surgical instruction of the third year. Students of the fourth-year class attend in sections the surgical clinics at the Boston City Hospital, the Boston Dispensary, the Carney Hospital, St. Elizabeth's Hospital, and at the School Dispensary, from October 1 to May 15. At these exercises students make personal examination and report to the instructor, in this way becoming practically familiar with the methods of making diagnosis from personal contact with the patient. Students of the class also have numerous opportunities of administering ether, of assisting at operations, and, with certain limimitations, of performing minor operations.

Each student is assigned at least two clinical cases for conference. Each of these cases must be carefully studied and written out in detail, giving the diagnosis, prognosis, and treatment, and a thorough discussion of all points connected with the particular case. The most valuable of these papers are selected, and after November 1 one conference is held each week, at which two papers are read and then freely discussed by the whole class.

The work in operative surgery consists of demonstrations on the cadaver, by the surgical staff, of all the important operations. Following these demonstrations the class is divided into small sections, and each student learns operative technique (ligation of arteries, amputations, and so on) by personal work, under the surveillance of the staff. It is intended that this course shall commence in November and continue daily until completed; but the continuous duration of the work is necessarily subject to the supply of available material.

CLINICAL GYNAECOLOGY

The abundant material at the Free Hospital for Women is utilized for the instruction of students of the fourth-year class. The almost continuous daily clinics (morning, afternoon, and evening) of the out-patient department provide an excellent course in methods of diagnosis and treatment of the diseases of women, superior to any other in New England. Each student receives nearly twenty hours of personal instruction at the

clinics. In addition, the operations at this hospital, two days in each week, demonstrate all forms of major pelvic surgery. Weekly conferences are held during the second half-year, wherein papers are read by the students and discussed.

NEUROLOGY

The department of neurology has been entirely reorganized under the direction of Dr. Morton Prince. Like other special departments of the fourth year, the course embraces in its scope a required and an elective branch. The required course consists of clinical and didactic lectures given by Dr. Prince at the Boston City Hospital, once a week for twelve or fifteen weeks. This course is supplemented by lectures by Dr. Hoch, on the anatomy, physiology, and pathology of the nervous system, also one hour a week for twelve or fifteen weeks. The elective work, in addition to the above, consists of clinical instruction, one or two hours a week, by Dr. Thomas. The student will have an opportunity to examine and study the patient for himself, thus becoming experienced in the methods of examination, and acquainted with nervous diseases as present in the subject. It will be the aim of the department to make this instruction as practical as possible.

MENTAL DISEASES

Instruction in mental diseases will be afforded by a course comprising didactic and clinical lectures, to be given weekly from January to the middle of May. Ten or more clinics will be held at the Boston Insane Hospital, where a large number of patients are received annually. Two clinics will be given also at the Massachusetts School for Feeble-Minded, at Waverly. It will be the aim of this course to allow the students to become familiar with the prevalent forms of mental trouble, the early symptoms of insanity, with the methods of commitment. Especial attention will be given mental defects in children.

Students are urged to prepare themselves for this course by taking the optional course offered in normal medical psychology.

LARYNGOLOGY

Instruction in the diseases of the nose and throat is both didactic and clinical. A systematic course of lectures is given to the third-year students in the amphitheatre of the school during the first half year. These lectures are illustrated by colored diagrams, models, pathological specimens, and the exhibition of instruments.

Clinical instruction in laryngoscopy and rhinoscopy is given to small sections of the class in the clinic of the School Dispensary. This work is required.

An elective course, mainly practical, is given to the fourth-year students during the last half-year. Special attention is given to the technique of instrumentation, also to general diagnosis and treatment. By the actual examination of cases the student is made familiar with the diseases that the family physician is expected to care for. Opportunity is given also to see the more important operations of the nose and throat. Practical lectures will be given at the school. The class will visit, in sections, the clinics of the School Dispensary, and also the Boston Dispensary.

OPHTHALMOLOGY

The course in ophthalmology will be of the most practical character possible, being designed to give the general practitioner such knowledge of the subject as is most essential to his practice. The lectures will be given twice a week, the first half of the school year. For clinical work the class will be divided into small sections, preparatory to instruction at the Massachusetts Charitable Eye and Ear Infirmary, the Carney Hospital. The fourth-year elective students will be given personal instruction by all members of the department throughout the school year.

ABDOMINAL SURGERY

Instruction is given in abdominal surgery, including appendicitis, hernia, and the major operations on the female pelvic organs, by two lectures and one quiz weekly to fourth-year stu-

dents during the first term, and by demonstrations on the cadaver, clinical conferences, and attendance of subdivisions of the class at operations.

LEGAL MEDICINE

The instruction in legal medicine consists of one lecture each week for twelve weeks, and will include all the subjects which are usually embraced under the head of medical jurisprudence. Instruction will be given in the making of medico-legal autopsies, with as many practical demonstrations as possible. The duty of a physician to the Commonwealth, and his rights both as a medical expert and as an ordinary witness, will be explained.

ORTHOPEDIC SURGERY

The work in orthopedic surgery consists of one lecture, four clinics, and one quiz each week of the first half-year, and of two exercises a week at the Carney Hospital (the class being divided into two sections), during the second half-year. One of the clinics of the first half-year is in special orthopedic pathology. The work of the second half-year consists of practical exercises in diagnosis and treatment in the out-patient department, and of ward visits, with opportunity to see the operative work, especially the orthopedic surgery of the adult.

MERCANTILE AND MILITARY MEDICINE

The lectures in mercantile and military medicine are intended to acquaint the student with the duties peculiar to the army and the navy surgeon, and the life-insurance examiner. Instruction is given in the methods of physical examination, the preparation of certificates, and other allied subjects. The instruction is given by Professor Arnold and Assistant Professor Dearing, in connection with the department of clinical medicine.

OTOLOGY

The instruction in otology consists of lectures and clinics at the Massachusetts Charitable Eye and Ear Infirmary, and, if desirable, at Carney Hospital. An elective course consists of clinical work at the same institutions.

DISEASES OF THE RECTUM

The course in diseases of the rectum will consist of twelve weekly lectures during the first half-year, at the School, and clinical instruction three mornings of the week, at the rectal department of the Boston Dispensary. Each student will have ample opportunity to examine, and in suitable cases to apply treatment. Especial attention will be paid to so-called "office treatment" of this class of diseases. Instruction will be given by Dr. Frank P. Williams.

DERMATOLOGY

The instruction in dermatology will consist of weekly lectures, from January to April. Also, from January to June, there will be three weekly clinics at the Boston City Hospital, where cases of skin diseases will be shown to the class, with an opportunity for each student to examine the cases personally.

GENITO-URINARY DISEASES

The various diseases of the genito-urinary system will be considered and illustrated by cases, as far as practicable. Clinics in this branch are held in the genito-urinary Department of the Boston Dispensary, from Oct. 1 to April 1.

ELECTRO-THERAPEUTICS

The course in electro-therapeutics will consist of twelve lectures, with occasional quizzes. It will include a brief review of the principles of electro-physics, the nature, methods of production, and physiological action of the various forms of electrical energy, together with a brief discussion of their therapeutic uses and limitations. A sharp distinction will be drawn between effects attributable to suggestion and those really due to electrical action. A clinic has been established where the student may observe the technique of the X-ray, the ultra-violet ray, and the high-frequency currents. Several evening lectures of a popular and experimental nature will be given on "The Phenomena of the Electrical Discharge, and its relation to the X-Ray and Radio-Activity." These lectures, while given pri-

marily for the class in electro-therapeutics, will be open to anyone interested in the subject.

PREPARATION

The work demanded by the first year of the Medical School is severe. It has been found that high school preparation is frequently inadequate. Hence prospective students of medicine are earnestly advised to pursue at least one year of preparatory study afternoon graduation from the high school and before entering npon distinctively medical studies. They will obtain thus a more thorough grounding, and will also familiarize themselves with the laboratory methods which form the basis of the work of the first and second years of the Medical School.

Tufts College is prepared to give instruction adapted to the needs of such persons. They may enter the College as special students, and it is suggested that the studies most valuable to them are Chemistry, Biology, Physics, English, German, and French. The following is an outline of the studies advised for those who take one year in the college as preparatory to medicine.

1. Biology 1. Two lectures each week on the general principles of biology and on the structure of animals and plants. Four hours of laboratory work. In the laboratory are dissected a dog fish, a frog, a rat, also various invertebrates and, in the second half-year, examples of the various groups of plants.

2. Chemistry 1. Two lectures and six hours of laboratory work each week. The lectures cover general theoretical and descriptive inorganic chemistry. The laboratory work is devoted to the principle elements and their compounds.

3. Physics 1. Three lectures a week, on the general principles of physics.

4. English 1. Three hours a week of instruction in composition and rhetoric.

5. German 1. Three hours a week, grammar, reader, etc.

6. French 1. Grammar, reader, and composition.

(French 2 or 3, or Grammar 2 or 3, are advised for those who have had preliminary training.)

NORMAL MEDICAL PSYCHOLOGY

A course of lectures in normal medical psychology is given to the fourth-year class, weekly, during the first half-year. Its aim is to discuss in their more general relations the principles of normal mental action, and to describe the mind as one of the two aspects or parts of every individual, Besides its own important value as science (and one the applications of which are seen in every hour of life), psychology is the indispensable basis of an understanding of the complex diseases of the mind and of the nervous system, just as physiology underlies practical medicine.

In addition to this, however, the course will discuss certain special topics of great practical importance to the medical practitioner: such topics for example as suggestability, temperament, mood, the numerous habits, sexual mental differences, will-power, the emotions, pain and pleasure. Knowledge of subjects such as these prepares the student better to understand his patient as an individual, and so better to treat his disease. The course is given by Assistant Professor Dearborn.

Requirements

FOR ADMISSION TO FIRST-YEAR CLASS

Candidates for admission to this school, except as hereafter stated, must pass a written entrance examination in the following studies:—

(*a*) English: a composition of two hundred words upon some subject of general interest; the same to be criticised in relation to expression of thought, construction of sentences, punctuation, spelling, and handwriting. The subjects for this examination in 1905 and 1906 will be chosen from the following:—

(1) Shakespeare's Merchant of Venice; (2) Thackeray's Henry Esmond; (3) Burke's Speech on Conciliation with America; (4) Scott's Ivanhoe.

Every candidate is expected to have read intelligently all the books prescribed.

(*b*) Algebra: such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

(*c*) Plane Geometry.

(*d*) Physics: such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

(*e*) Latin: a sight translation of such elementary Latin as is usually included in one year of study; as, for example, the first fifteen chapters of Caesar's Commentaries, and the translation into Latin of easy English sentences involving the same vocabulary.

Students applying for admission to this school are advised to prepare themselves in Elementary French, German, and Chemistry although at the present time no entrance examination in these branches is required.

Students who fail in one or more of these subjects may be admitted, subject to condition; but no student will be allowed to commence his second year whose entrance conditions are not removed.

EXCEPTIONS.—Graduates of approved high and preparatory schools will be admitted on presentation of approved entrance certificates. Also students holding certificates of entrance to a college or university, those holding the State of New York Regents' certificate, and graduates of a college or university will be admitted without entrance examination. Students who intend entering the school on credentials must bring them. A certificate of graduation attested by a town clerk will be accepted in lieu of a diploma.

The entrance examinations are conducted at the Medical School building, under the supervision of an officer of the College of Letters.

Entrance examinations will be held on Monday, June 12, 1905, and on Monday, Sept. 25, 1905, at 10 A.M.

Candidates who intend taking these examinations are required to notify the Secretary one week before date of examinations.

Advanced Standing

Students of Tufts College who have taken the Medical Preparatory Course, which contains equivalents of the first year of work in the Medical School, and who are registered as having fulfilled the requirements in anatomy, physiology, general chemistry, and histology, may be admitted to the second-year class.

No credit will be given for examinations passed at other schools.

Students from other schools who are candidates for advanced standing must present themselves for examination on Monday, Sept. 18, 1905.

Promotion

Students who have passed a majority of the first-year examinations, and who have removed all entrance conditions, are admitted to the second-year class. Students are required, however, to have qualified in General Chemistry before they are eligible to the Medical Chemistry of the second year.

The Third-Year Class

Students who have passed all the first-year examinations, and a majority of the second-year examinations, may be admitted to the third-year class.

The Fourth-Year Class

Students who have passed all the examinations of the first and the second year, and a majority of the subjects of the third year, and graduates of other approved medical schools, may be admitted to the fourth-year class.

Students will be registered in the catalogue in accordance with these requirements.

GRADUATION

For the Degree of M.D.

Candidates for the degree of Doctor of Medicine must have fulfilled the following requirements:

1. They must furnish certificates that they are twenty-one years of age and of good moral character.
2. They must have attended four full courses of medical lectures at some accredited medical college, the last course of which shall have been at this school, and no two courses in the same twelve months.
3. They must have passed all the required examinations.
4. They must have attended two cases of obstetrics.
5. They must have satisfactorily dissected one half of the body, under the direction of a demonstrator of anatomy.
6. They must have paid all fees before the final examinations.

The final marks are derived from work in recitations, laboratories, clinics, and dissecting room, and from written examinations.

The Faculty reserve the right to change these requirements without further notice.

HONORS

Students who have attended four full courses of lectures at this school, and have obtained an average of 90 per cent. in their examinations, shall be eligible to "*summa cum laude*"; and students who have obtained an average of 80 per cent. shall be eligible to "*cum laude*," in connection with the degree received.

OUTLINE OF THE COURSE

First Year

Descriptive Anatomy.—Lectures, demonstrations, recitations, and dissecting. *Sixteen hours a week during the first semester.*

General Chemistry.—Lectures, and required laboratory work. *Thirteen hours a week during the second semester.*

Physiology.—Lectures, demonstrations, conferences, recitations, experimental work in the laboratory, and written tests. *Sixteen hours a week during the second semester.*

Histology.—Lectures, demonstrations, and required laboratory work. *Ten hours a week during the first semester.*

Hygiene.—Lectures on Elementary Hygiene, *ten hours.*

Final examinations upon these subjects occur at the close of the first and the second semester, respectively, of the first year.

Second Year

Materia Medica and Therapeutics.—Lectures and recitations. *Four hours a week during the first semester.*

Medical Chemistry and Toxicology.—Lectures and required laboratory work. *Twelve hours a week during the first semester.*

Pathology.—Lectures, demonstrations, and required laboratory work. *Twelve hours a week during the second semester.*

Bacteriology.—Lectures and required laboratory work. *Five hours a week during the second semester.*

Normal Auscultation and Percussion.—Lectures and exercises during the second semester.

Final examinations upon these subjects are required at the close of the first and the second semester, respectively, of the second year.

Bandaging and Apparatus.

Third Year

Theory and Practice of Medicine.—Lectures, and recitations. *Four hours a week.*

Surgery.—Lectures and recitations. *Three hours a week.*

Obstetrics, including attendance upon two cases of labor. Lectures and recitations. *Five hours a week.*

Ophthalmology.—*Two hours a week.*

Gynaecology.—Lectures and recitations. *Three hours a week.*

Laryngology.—*Two hours a week.*

Pediatrics.—*Six hours a week.*

Hygiene.—*One hour a week.*

Medical Diagnosis.—*Two hours a week.*

Final examinations upon these subjects are required at the close of the third year. Third-year students who have creditably passed all their previous examinations will be allowed to take some of the fourth-year studies, subject to the approval of the Faculty.

Fourth Year

Clinical Medicine, Clinical Surgery, Abdominal Surgery, Clinical Gynaecology, Otology, Neurology, Dermatology, Diseases of the Rectum, Genito-Urinary Diseases, Orthopedic Surgery, Mental Diseases, Electro-Therapeutics, and Legal Medicine.

The final examinations of the fourth year will consist of three-hour examinations upon Clinical Medicine and Clinical Surgery, and two electives to be chosen by the student from the above list, to which are added **Ophthalmology** and **Laryngology**. Abdominal Surgery, Electro-Therapeutics, and Legal Medicine cannot be taken as electives. There will be a one-hour examination in all the above subjects, except the four in which three-hour examinations are held.

EXAMINATIONS

There are two periods of examination each year in the school building. They are in writing, and are held durig then week preceding the opening of the regular course of lectures in the fall, and at the close of the course in the spring.

The fall examinations are for

(*a*) Students commencing the study of medicine.
(*b*) Students applying for advanced standing.
(*c*) Students who failed in the spring.

The spring examinations are for promotion and graduation.

Students intending to take any of the spring examinations must register their names with the Secretary, on or before May 1, 1905. All students who intend taking any of the fall examinations must register their names with the Secretary, on or before September 1, 1905.

Students who have failed twice in the examination upon a subject will not be permitted to take a third examination without repeating the course in that subject and paying a fee of twenty dollars.

TEXT-BOOKS

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy.—Gray, Morris, Cunningham, Eisendrath, Haynes's Dissector.

Physiology.—Syllabus (for laboratory directions), Stewart's Manual, Landois, Brubaker, American Text-book, Foster, Kirke, Verworn, Schäfer, Porter.

General Chemistry.—Simons's Manual of Chemistry, Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis.

Histology.—Syllabus, Böhm and Davidoff, Stohr.

Medical Chemistry.—Austin and Coriat's Laboratory Manual of Physiological Chemistry, Simon's Physiological Chemistry, Kobert's Practical Toxicology.

Collateral Reading.—Hammarsten's Physiological Chemistry, Lewin's Toxicologie.

Materia Medica and Therapeutics.—Bartholow, Hare, Wood, Cushny, United States Dispensatory, Gerrish's Prescription Writing.

Pathology.—Syllabus, Stengel, Ziegler, Coplin, Mallory and Wright's Technique, Durck's Pathological Histology, Cohnheim, Green, American Text Book.

Bacteriology.—Syllabus, Muir and Richie, Park, Levy and Klemperer, McFarland, Abbott, Lehmann and Neumann, Sternberg.

Obstetrics.—Hirst, Reynolds, Jewett, American Text-book.

Gynaecology.—Greig-Smith, Byford, Dudley, Kelly, Reed.

Clinical Gynaecology.—Davenport, Dudley, Greig-Smith.

Surgery.—International Text-book, Wharton and Curtis, Roberts, Roswell Park, American Text-book, Stimson on Fractures and Dislocations, Scudder on Treatment of Fractures, Da Costa.

Clinical and Operative Surgery.—International Text-book, Roswell Park, American Text-book, Wharton and Curtis, Roberts, Bryant's Operative Surgery, Zuckerkandyl's Operative Surgery, Burrill and Blake.

Practice of Medicine.—Osler, Tyson, Thompson, Strümpell, Eichhorst, Ander's Practice of Medicine.

Dermatology.—Diseases of the Skin by Hyde and Montgomery, Duhring, Stelwagon, Crocker, Kaposi, Besmer.

Hygiene.—Bergey, Principles of Hygiene; Egbert's Hygiene and Sanitation.

Clinical Medicine.—Osler's Practice of Medicine, Wood and Fitz's Practice, Musser's Medical Diagnosis, Tyson's Physical Diagnosis.

Neurology.—Church and Peterson, Oppenheim, Gower, Dana.

Mental Diseases.—Chapin, Cloustin, Peterson, Lewis, Dictionary of Psychological Medicine.

Pediatrics.—Holt's Diseases of Infancy and Childhood, Koplik's Diseases of Infancy and Childhood, Thompson's Clinical Examination and Treatment of Sick Children.

Laryngology.—Shurley, Coakley, Kyle, Knight.

Diseases of the Rectum.—Kelsey's last edition; Ball, last edition; Tuttle, Gant, second edition.

Orthopedics.—Bradford and Lovett, last edition.

Otology.—Buck, Politzer and Bennett's System of Diseases of the Ear, Throat, and Nose.

Ophthalmology.—Fuch, Swanzey, May.

Medical Dictionary.—Gould, Dunglison.

FEES AND EXPENSES

For tuition the uniform fee of *one hundred and fifty dollars* for each year is required of all students entering the School during or after the academic year 1904-1905. This fee may be paid in instalments if desired, in which case a first payment of *seventy-five dollars* must be made before October 15, and a second payment of *eighty dollars* before February 1.

Students who entered the School prior to the academic year 1904-1905 will pay the fees prescribed by the catalogue under which they entered.

Postgraduate fee for graduates of other schools	$120.00
Single course	30.00
Postgraduate fee for graduates of this school	60.00
Single course	20.00
Anatomical material	at cost

No student will be admitted to the exercises of the first half-year who has not paid the first instalment, and no student will be admitted to the exercises of the second half-year who has not paid the fees in full.

The Bursar of the College will be at the School Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from October 1 to June 1.

There are no scholarships connected with the School.

The expenses of living in Boston need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained in the vicinity of the School at from $4 to $7 a week. Students will not be allowed to occupy rooms disapproved by the Faculty.

General Information

CLINICAL ADVANTAGES

Boston, as the largest city in New England, offers unusual facilities to the student of medicine. The amphitheatres of the Boston City Hospital, the Massachusetts General Hospital, the Massachusetts Charitable Eye and Ear Infirmary, are open to students, and opportunity is thus afforded for witnessing the more extensive surgical operations.

Clinics are held at the Boston City Hospital, the Massachusetts Charitable Eye and Ear Infirmary, the Boston Dispensary, the Carney Hospital, the Tremont Dispensary, the Cambridge Hospital, the Free Home for Consumptives, the Free Hospital for Women, the Women's Charity Hospital, St. Mary's, the Good Samaritan, and the Dispensary of the Medical School.

LIBRARIES

The students have free access to the library of the school, to the library of Tufts College, and, under certain restrictions, to the Boston Medical Library and to the Boston Public Library. The Boston Public Library contains a collection of more than fifteen thousand books upon medical subjects.

SESSIONS OF THE SCHOOL

The annual course of lectures begins on the last Wednesday in September of each year, and continues until the last Wednesday in May. The annual course of lectures for 1905-1906 will commence Wednesday, September 27, 1905.

VACATIONS

There are no exercises at the school for three days at Thanksgiving, during the weeks of Christmas and Easter, nor upon Washington's Birthday, Patriots' Day, and Memorial Day.

Summer Courses

The following laboratory subjects are offered during the summer months:—

PHYSIOLOGY

A course in Physiology will be given during the months of June and July. While the work will consist chiefly of laboratory exercises, it will also include a number of lectures and recitations adequate to the outlines and basal principles of physiology. The fee for this class will be twenty dollars.

MEDICAL CHEMISTRY

A summer class in Medical Chemistry is conducted by Dr. Thorpe. The work consists of the entire laboratory part of the regular winter work. The class is open to all, but is particularly designed to give the first-year students of the previous winter an opportunity to do advanced work. They are permitted to take the laboratory part of the examination in the following autumn, and the written part in the next following spring, after attending the winter's lectures and recitations. The work begins on the first Monday following the 5th of June, and continues eight weeks. The fee is twenty-five dollars.

HISTOLOGY

A summer course in Histology will be given under the direction of Professor Bates. Particulars as to the scope of this work, and the fee, may be learned upon application to Dr. Bates.

STANDING AND CERTIFICATES

Graduates of other regular medical schools in good standing may receive the degree of this school, after attending one course of lectures and passing the examinations of the four years. It is understood that a course of lectures requires actual presence at a majority of the exercises of the session.

Students who do not wish a degree will be received for any portion of the course. Any student may obtain a certificate of work during his period of connection with the school.

All students joining the school for the first time must furnish the Secretary with the application blank properly filled. *All students must fill out and deposit a registration blank before October 7.*

Requests for the annual Announcement, and all other communications relating to the business of the school, should be addressed to CHARLES P. THAYER, A.M., M.D., Secretary, Tufts College Medical School, Boston, Mass.

THE DENTAL SCHOOL

Faculty of the Dental School *

ELMER HEWITT CAPEN, A.M., D.D., LL.D. . . . . Tufts College
PRESIDENT

HAROLD WILLIAMS, A.B., M.D. . . . . 528 Beacon St., Boston
DEAN, *and Professor of the Theory and Practice of Medicine*

CHARLES PAINE THAYER, A.M., M.D.
Tufts College Medical School
SECRETARY, *and Professor of General, Descriptive, and Applied Anatomy*

HENRY JABES BARNES, M.D. . . . . 429 Beacon St., Boston
Professor of Hygiene

CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree
Professor of General Chemistry

SAMUEL AUGUSTUS HOPKINS, M.D., D.D.S.
235 Marlborough St., Boston
Professor of the Theory and Practice of Dentistry

EDWARD WALTER BRANIGAN, D.D.S.
Professor of Clinical Dentistry 2 Commonwealth Ave., Boston

FRANK GEORGE WHEATLEY, A.M., M.D. . . . . North Abington
Professor of Materia Medica and Therapeutics

FREDERICK MELANCTHON BRIGGS, A.B., M.D.
Professor of Clinical Surgery 31 Massachusetts Ave., Boston

JOSEPH KING KNIGHT, D.D.S. . . . . Hyde Park
Professor of Prosthodontia

GEORGE ANDREW BATES, D.D.S., M.S. . . . . Auburndale
Professor of Histology

FREDERICK MORTIMER HEMENWAY, D.D.S.
Professor of Prosthetic Dentistry 88 Boylston St., Boston

TIMOTHY LEARY, M.D. . . . . 20 Sunset St., Roxbury
Professor of Pathology and Bacteriology

* The names of the Dental Faculty, after the President, the Dean, and the Secretary, are arranged in groups: Professors, Assistant Professors, Instructors, and Assistants. Within each group the order is that of academic seniority.

EUGENE THAYER, A.M., M.D. . . . 2683 Washington St., Roxbury
Demonstrator of Anatomy

BYRON HOWARD STROUT, D.D.S. . . . . Taunton
Assistant Professor of Operative Technics and Instructor in Anaesthesia

GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D.
Assistant Professor of Physiology Garrison Hall, Garrison St., Boston

OTHER INSTRUCTORS

WALTER IRVING BRIGHAM, D.D.S. . . . . South Framingham
Lecturer on Operative Dentistry

EDGAR OSGOOD KINSMAN, D.D.S. . . 15 Brattle Sq., Cambridge
Instructor in Clinical Dentistry

WILLIAM RICE, D.D.S. . . . . 845 Boylston St., Boston
Instructor in Clinical Dentistry

GEORGE LYLE MARSHALL, D.D.S. . . . . 5 Bow St., Somerville
Instructor in Prosthetic Dentistry

FRED CARVILL MERRILL, D.D.S. . . . . Wollaston
Instructor in Prosthetic Dentistry

HENRY MARTIN HILLS, D.D.S. . . 2 Commonwealth Ave., Boston
Instructor in Clinical Dentistry

WILLIAM PRESTON HOUSTON, D.D.S. . 419 Boylston St., Boston
Instructor in Clinical Dentistry

CHARLES DAVISON KNOWLTON, M.D. 574 Warren St., Roxbury
Instructor in Pathology and Bacteriology

HENRY HILDRETH PIPER, D.D.S. . . . . Winter Hill, Somerville
Instructor in Clinical Dentistry

JOHN WOOD FORBES, D.D.S. . . . . 419 Boylston St., Boston
Instructor in Clinical Dentistry

JOHN INNES FRENCH, M.D. . . . . 2A Park St., Boston
Instructor in Materia Medica and Therapeutics

BURLEIGH CHILDS GILBERT, D.D.S. . . . . Stoneham
Instructor in Clinical Dentistry

ERVIN ARTHUR JOHNSON, D.D.S. . . . 176 Federal St., Boston
Instructor in Clinical Dentistry

FREDERICK BOOTH STEVENS, D.D.S. . . Everett Sq., Hyde Park
Instructor in Clinical Dentistry

GUY MONROE WINSLOW, PH.D. . . . . Auburndale, Mass.
Instructor in Histology

IRVING JOSIAH WETHERBEE, D.M.D. . 120 Boylston St., Boston
Instructor in Clinical Dentistry

I. EUGENE R. REID, M.B., C.M. . . 18 Chestnut Ave., Jamaica Plain
Instructor in Anatomy

JAMES PROCTOR LOCKHART, D.M.D.
Instructor in Clinical Dentistry 837 Massachusetts Ave., Cambridge

WILLIAM LITTLEFIELD RIPLEY, M.D. . . . . Newton
Instructor in Physiology

CURTIS WILLIAM FARRINGTON, D.M.D.
Instructor in Clinical Dentistry 246 Huntington Ave., Boston

VARNEY ALBERT KELLEY, D.M.D. . . . . 21 Maple St., Danvers
Instructor in Clinical Dentistry

SIDNEY BURT SARGENT, D.M.D. . . . . Rockland
Instructor in Clinical Dentistry

KNUT JOSEPH LUTTROPP, D.D.S. . . . 419 Boylston St., Boston
Demonstrator in Operative Dentistry

FREDERICK WARREN PEARL, A.B., M.D.
Hotel Vendome, Commonwealth Ave., Boston
Assistant Demonstrator of Anatomy

GEORGE ARTHUR WEBSTER, M.D. . . . 419 Boylston St., Boston
Assistant in Anatomy

WILLIAM GRAY ADAMS, M.D. . . . . Hyde Park
Assistant in Anatomy

HENRY HOMER GERMAIN, M.D. . . . . 4 Arlington St., Boston
Assistant in Anatomy

LUTHER GORDON PAUL, M.D. . . . . 657 Boylston St., Boston
Assistant in Anatomy

ADELAIDE OLGA CUSHING-LEARY, M.D.
Assistant in Pathology and Bacteriology . . 20 Sunset St., Roxbury

JOHN SCOTT McLEOD, M.D. . . . . 113 Warren St., Roxbury
Assistant in Anatomy

WILLIS JOHNSON MIDDLETON, M.D. . . . . Quincy
Assistant in Anatomy

ALONZO KINGMAN PAINE, M.D. . . . . 43 Tremont St., Boston
Prosector in Anatomy

LABORATORY ASSISTANTS

Physiology

SYDNEY C. HARDWICK . . . . . Quincy
RALPH W. E. COLE . . . . . Franklin Falls, N. H.
ELWIN H. WELLS . . . . . Rumney, N. H.
FRANK W. WHITE . . . . . Arlington

General Chemistry

JOSEPH A. MEEHAN . . . . . Lowell
CUSHMAN DAY . . . . . Boston
ERNEST DOWNING HATCH . . . . . Boston
DANIEL EDWARD KEEFE . . . . . Athol
RAYMOND E. GATES . . . . . E. Dedham

Histology

FRANKLIN WELLES . . . . . Boston
MARIAN F. ALBRO . . . . . Providence, R. I.
WALTER H. YOUNG . . . . . E. Dedham

Pathology and Bacteriology

EDISON W. BROWN . . . . . Dorchester
LEON S. MEDALIA . . . . . Boston

Pharmacology

WILLIAM A. DUTCHER . . . . . Boston
WILLIAM J. BROWN . . . . . Roxbury

OTHER OFFICERS

HERBERT T. BROWN . . . . . Tufts College
Bursar

MARY WRIGHT RICHARDSON
Clerk in Infirmary

SARAH ELIZABETH MILLER
Clerk in the Prosthetic Department

FRANCES WILDER
Matron in the Operating-Room

STANDING COMMITTEES OF THE DENTAL SCHOOL

ADMINISTRATION.—The President, Drs. Branigan and Bates
ADMISSION.—Drs. Leary, Bates and Dearborn
NOMINATIONS.—Drs. Hopkins and Barnes
LIBRARY.—Drs. Knight and Bates
INSTRUCTION.—Drs. Knight, Hopkins, Hemenway, and Bates
CATALOGUE.—Drs. Bates and Dearborn

The Dean and the Secretary are members of all the above committees, *ex officiis*

Tufts College Dental School

The Dental School, formerly the Boston Dental College, became an incorporate part of Tufts College in 1899, under a special act of the legislature. It was incorporated under its former name in 1868, and is a firmly-established dental school of thirty years' standing, with a large and distinguished body of alumni. Its transfer to Tufts College was in consequence of the new anatomical laws of the State, and because it was felt by its former board of trustees that the advance in dental education rendered it desirable that the more purely scientific portion of its curriculum should be pursued in connection with a medical school.

The course of instruction in this institution embraces four academic years of eight months each.* The studies of the first year, and a portion of those of the second year, are identical with those of the Medical School. Instruction is given by means of lectures, demonstrations, laboratory work, and recitations, in anatomy, physiology, histology, chemistry, materia medica, pathology, therapeutics, bacteriology, principles of surgery, theory and practice of dentistry, oral surgery, and in operative, clinical, and prosthetic dentistry, orthodontia, and dental technics.

The infirmary, under the personal direction of the Professor of Clinical Dentistry, assisted by a corps of demonstrators, is open daily through the year, except during a part of June, the

* IMPORTANT NOTICE.—At a special meeting of the National Association of Dental Faculties, held at St. Louis, Mo., July 18, 1904, it was voted to establish for schools of the Association a three years' course of thirty weeks of six days each, exclusive of all vacations and holidays. In deference to this action of the majority of the schools of the Association, the Faculty of the Tufts College Dental School has voted to establish a three years' optional course, to which students previously matriculating under the four-year requirements shall also be eligible. At the same time it is the opinion of the Faculty that four years is not too long for a satisfactory preparation for the dental profession, and students are earnestly advised to avail themselves of the opportunities offered by the four-year course. Students completing the four-year course in a satisfactory manner will be graduated with honors.

whole of July and August, and a part of September. In the abundance and variety of its clinical material, it furnishes an unsurpassed opportunity for the study of oral surgery and of dentistry in all its branches.

The Laboratory of the Prosthetic Department is provided with perfect facilities for every variety of dental work. Every student is required before graduation to present satisfactory specimens of the different forms of mechanical work made by himself in the laboratory of the school, and under the supervision of the Professor of Prosthetic Dentistry.

The aim of this institution has always been to give its students such a training as will not only insure to them the knowledge necessary to equip them for the practical part of the dentist's work, but also inspire in them a respect for the dignity of the profession which they seek to enter.

It is believed that the dentist is not over-educated who is possessed of a working knowledge of the fundamental elements of the science of medicine. Such knowledge can but inspire him with more profound respect for his own branch of study, which stands so closely related to the mother science. But, while the School seeks to keep constantly before the student the need for a proper appreciation of the character and standing of his professional relations, no pains are spared to give abundant instruction in all the elements which pertain to the subjects that are needed to graduate well-trained, practical dentists.

Attention is therefore called to the fact that the student, during three entire years of his course, is under the supervision of a professor and his demonstrators, who are in daily attendance at the infirmary.

The library of the School contains many medical and dental books and periodicals, and is being constantly increased, the aim being to add the new and important books in the various departments as they are issued. The library is open for reference, and books are loaned to students. All the students are earnestly requested to make use of this privilege. Students also have access to the Boston Public Library, which contains

one of the largest collections of scientific works in the United States.

Further opportunities for instruction are furnished by the valuable clinics and operations at the large hospitals of the city, which can be visited by the matriculates of this institution. Numerous operations upon the face and oral cavity are performed before students on public operating-days, and all connected with the school are urged to avail themselves of the facilities thus offered.

THE NEW BUILDING

Owing to the rapid growth of the Medical and Dental departments of the College, it was found necessary to provide increased laboratory facilities. Accordingly, in 1900 the Trustees voted to provide a new building for the combined departments, and in consequence land was purchased upon the corners of Huntington and Rogers avenues and Courtland and Drisko streets. The new building is now completed and occupied. It is constructed of Jonesport red granite and brick, with terra cotta trimmings. It was designed by Mr. J. Philip Rinn of Boston, the architect of Robinson Hall and of the State Normal Schools at Salem and Fitchburg. In its arrangement Mr. Rinn was aided by the co-operation of committees selected from the board of Trustees and from the Medical and Dental Faculties. It contains nearly an acre-and-a-half of floor space; and is heated, ventilated, and lighted according to the most approved modern methods. Modern improvements have been introduced in all departments, and every effort has been made to render the new building the best arranged as well as the largest structure of its kind in New England. Special attention is called to the new dental infirmary, which occupies the first floor of the dental wing. This room, 125x29 feet, is equipped and arranged in a manner similar to the operating room of a hospital; aseptic chairs, cuspidors, and brackets have been especially constructed for this school; steam sterilizers are provided for the disinfection of instruments, and it is believed that by these modern applications of asepsis to dentistry the new infirmary is among

the best equipped and the most complete dental infirmaries in this country. The prosthetic department, which corresponds in size to the infirmary, is equipped in the most approved modern fashion. For this department, electric power is supplied. The building may be reached by any Huntington Avenue car with the exception of those of the Cross Town and Cambridge lines.

Course of Instruction

ANATOMY

As a knowledge of the human body is considered essential to the well-equipped dentist, the course in anatomy will consist of lectures, recitations, and practical work in the dissecting room.

The lectures are illustrated by plates, manikins, and dissections before the class. Each student is required to dissect under the supervision of the Demonstrator of Anatomy, and will be required to pass an examination upon the part dissected.

The course is identical with that given the medical students, and is taken with them.

An ample supply of anatomical material is always obtainable.

CHEMISTRY

The work in chemistry is divided into two parts. During the second half of the first year it is the same as is given to the students of the Medical School. There are five lectures and two recitations each week, with six hours or more of work in the laboratory, including descriptive chemistry, qualitative analysis, and so much of theoretical chemistry as is necessary for a proper understanding of the subject. The classification of the carbon compounds, also, is treated at considerable length, and special reference is made to those compounds which are of interest in dentistry or medicine.

During the second year this preliminary training in chemistry is followed by lectures, recitations, and laboratory work in dental chemistry. The metals, with their alloys and salts as used in dentistry, the bones and the teeth, the saliva, and the chemistry of the mouth are carefully studied. This part of the work will be much extended in the near future, the high importance of chemistry to the dental profession being fully recognized.

PHYSIOLOGY

The course in Physiology is given throughout the latter half of the first year. It constitutes half of the entire work required of the student during that period, the modern "concentration method" of instruction being in practice in this school. The course consists of four recitations, two lectures, six hours of laboratory work, and three conferences for every student each week, the preparation of a technical written paper, and extra demonstrations.

In the recitations, familiarity with the substance of Stewart's "Manual of Physiology" and with the Syllabus is required. The lectures set forth the principles of general physiology, and suggest some of its relations to the allied sciences, especially anatomy. In the laboratory the student has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function. A strict practical examination may be held at the end of the year in the laboratory. The conferences give volunteers opportunity to become familiar with the literature on interesting physiological topics, which are then presented briefly in written reports and freely discussed by the class. Record both of the attendance and of the quality of the work done in the laboratory and recitation-room will be kept, and, with the conference, will *largely* determine the standing of the student in the department. In addition, a three-hour written examination, covering the entire scope of the year, is held at the completion of the work, besides important subsidiary written examinations, monthly.

By thus concentrating attention upon physiology during an adequate period, it is hoped that a thorough and indispensable grounding in the functions of the normal human organism will be acquired. Advanced work in physiology will be provided for competent students, by special arrangement with the head of the department, the constant aim being to adapt the labors of each student both to his needs and to his capabilities.

HISTOLOGY

The subject of histology covers the first half of the first year. The work during the first half of the allotted time will be identical with that of the students in the Medical School. This part of the work covers the study of the elementary tissues, treated comprehensively, beginning with their origin in the embryo. Dental histology will be taught during the second year. In this connection particular attention will be given to the study of the minute anatomy of the tooth. The development of the teeth will also receive careful treatment. A training which gives the student a knowledge of the origin and history of the dental germ lays a suitable foundation for the dentist.

The department is equipped with microscopes which, on the payment of a small fee, will be at the service of such as cannot furnish instruments of their own.

ELEMENTARY HYGIENE

The chief object of instruction in hygiene at the commencement of professional study is to promote a healthy moral, mental, and physical development. The student is informed of the penalties attendant on deviations from the path of rectitude. In the absence of the restraining influences of home, pure associates and wholesome surroundings are esteemed of paramount importance. The student is early taught how diseases are acquired through disregard of moral and physical laws, and how they are transmitted from one person to another. He is taught why a sound body is a barrier to many diseases, and that pure air and water, wholesome food, proper clothing, and cleanly habits are essential for the best physical and mental growth.

The code of ethics taught in this department is designed to stimulate every student in the aspiration to obtain an honorable name in the profession.

OPERATIVE DENTISTRY

In operative dentistry the instruction is both didactic and clinical. Lectures are given covering the whole field, familiarizing the student with all known methods, the conditions under

which different filling materials are used, and the most approved manipulation of the same. Many lectures are followed by clinics before divisions of the classes, where attendance is obligatory. By this means every detail of the operation is impressed upon the mind of the student. Great emphasis is placed upon the preparation of cavities for filling. Instruction is further given concerning the pathological conditions of the mouth and the treatment of the same, exposed pulps, inflamed pulps, dead pulps, abscesses, inflammation of the peridental membrane, and allied subjects. Special attention is given to the preparation of cavities for porcelain filling, and the manipulation of the same. Prophylaxis also is taught, under improved systematized methods.

OPERATIVE TECHNICS*

The technical laboratory is situated on the lower floor, and is exceptionally well lighted from three sides. It is equipped with benches having lock drawers for each student, and has power lathe and other implements for convenient use.

Instruction in this course will be by lectures, illustrated by models and drawings, and by practical work on the part of the student. The student's work will include the study of the forms of teeth, with carving in ivory; study of the position and form of pulp chambers and canals, with dissection of teeth; proper methods of treating and filling pulp canals, with operations on extracted teeth. Porcelain inlay work, with practical examples, also proper methods of forming cavities for filling, and the manipulation of all filling materials, will be included.

CLINICAL DENTISTRY

The method of instruction in clinical dentistry is by clinical lectures to the students of each class, accompanied by practical demonstration of various operations on the teeth and neighboring tissues.

Ample opportunity for work in practical operative dentistry

NOTE.—The operations in the technical departments require a very large number of natural teeth, and a sufficient supply is sometimes difficult to get. It will therefore be to the interest of students if they will bring with them all the extracted teeth they can obtain.

is furnished in this department, and the student, by actual practice, receives training in the various dental operations, and in the diagnosis and treatment of diseased conditions of the mouth and teeth.

PROSTHODONTIA

The course of instruction in prosthodontia embraces the history, nature, and properties of the various materials used in making artificial dentures, with a special course to the second-year class in making and tempering instruments. Particular attention is given to practical manipulation of vulcanite, celluloid, aluminum, and cast metal, for dentures; to gold-plate work and the application of continuous gum to platina; to the manufacture of porcelain teeth in single and block forms; and to crown and bridge work. The natural form, color, and arrangement of the teeth, together with the entire range of procedure, from taking the impression to the completion of the case and its proper adjustment in the mouth, are thoroughly discussed.

ORTHODONTIA

The most important part of the course in orthodontia will consist of the treatment of practical cases. The work will be done by individual students, under the direction of the instructor. Every effort will be made to familiarize the student with the best and latest methods.

MATERIA MEDICA AND THERAPEUTICS

Instruction concerning materia medica and therapeutics consists of lectures, recitations, and laboratory exercises. Especial attention is given to the physiological action of drugs in its relation to their therapeutical application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory is designed to familiarize the student with all medicinal preparations and processes, and consists of exercises in which the class, in sections, is taught by practice. Prescription writing, and the metric system, will receive careful attention. Such of the recent additions to materia medica as are deemed worthy will be properly considered.

PATHOLOGY AND BACTERIOLOGY

The subjects of pathology and bacteriology will be considered together. This method permits showing the relation of bacteria to the disease processes which they produce. The work will consist of lectures, required laboratory work, and demonstrations. The student is made acquainted with the bacteria of the mouth, and is required to cultivate and study the important organisms. He is expected to carry out experiments to demonstrate the production of artificial caries. The subject of general pathology willl be thoroughly covered. The special pathology of the mouth, and of the respiratory and intestinal tracts, will be given particular attention. Inflammation, especially the infectious types, among which are the lesions produced by the pyogenic bacteria, will be given particular attention. The process of repair in soft tissues and bone, and tumors of the mouth and face, are studied from sections of human and experimental lesions, and illustrated by demonstrations of gross specimens. In connection with the study of infectious processes, the specific bacteria will be cultivated and studied. Diseases of the circulatory system are illustrated by lectures, and gross demonstrations. The methods of sterilization and their relative efficacy are practically studied, and tests are made of a large series of antiseptic and disinfectant substances.

The pathological and bacteriological department of the school occupies over four thousand square feet of floor space, with a frontage of one hundred and sixty feet. It is excellently lighted. The laboratory furnishes accommodation for one hundred students, and is supplied with all the materials necessary for thorough work.

THEORY AND PRACTICE OF DENTISTRY

The instruction in the theory and practice of dentistry is designed to teach the most advanced scientific discoveries in relation to this art.

It will include such subjects as the action of mouth bacteria, diseases dependent upon dental lesions, dental prophylaxis, oral hygiene, and the ethics of dental practice. The course

will be arranged to harmonize with and to supplement the work of the clinical department.

THEORY AND PRACTICE OF MEDICINE

The work in the theory and practice of medicine consists of a series of lectures given to the dental students by members of the Faculty and board of instruction of the Medical School. It is intended to include such subjects as general infectious and contagious diseases; syphilis; stomatitis and tonsilitis; diseases of the heart, kidneys, and skin; neuralgia and neurasthenia; disorders of the alimentary tract; pregnancy; tuberculosis. Lectures upon legal medicine and other subjects will be given. It is believed that a course of this description will be of the utmost practical value to dental students, as it will make them acquainted with the nature of a large class of diseases and conditions which they are liable to meet in the practice of dentistry. It is expected that Drs. Williams, Otis, Austin, Arnold, White, Stowell, Chenery, and Howe, of the Medical School, will contribute to this series of lectures.

SURGERY

The course in Surgery will consist of a systematic series of lectures covering its principles. These lectures will explain the fundamental facts which should be thoroughly understood by all students who propose to treat any portion of the human body. They will not be limited to surgery of the mouth, although especial attention will be given to this portion of the subject, but are intended to give the dental student a sound knowledge of surgery in general.

Antisepsis and anaesthesia will be minutely discussed, and practically demonstrated in the Infirmary, in conjunction with the Professor in Operative Technics and Anaesthesia. The student will be carefully instructed in the administration of ether and of nitrous-oxide gas. In addition to the daily instruction, one morning in each week will be devoted wholly to this work, the class being divided into sections. At this weekly demonstration, cases will be presented exemplifying the choice of an anaesthetic in the particular case. The danger signals

of anaesthesia will be considered, and the proper treatment explained. Local anaesthesia will receive careful attention, and its limitations pointed out.

The technic of aseptic and antiseptic methods in dental work will be thoroughly explained, and shown in connection with the demonstrations of anaesthetics.

ANAESTHESIA AND EXTRACTION

The extracting-room, a well-lighted apartment, is supplied with all needful instruments and appliances for extracting teeth, and for the performance of the simpler operations in surgery. Ample waiting rooms are adjacent, and also rooms for the care of patients after anaesthesia. Administrations of nitrous-oxide gas and ether are made daily. The room is at all times under the personal supervision of the Instructor in Anaesthesia.

CLINICAL CONFERENCE

Each clinical conference consists in the reading of an essay upon some practical subject,—the written report of an actual case by a student of the Senior class,—at a meeting of the class presided over by a member of the Faculty. The report is intended to bring out all the features of the case with regard to such topics as its etiology, pathology, and treatment. When possible, the patient will be presented to the class for examination. The case is fully discussed by the members of the class and by the professor in charge.

Requirements

FOR ADMISSION

Candidates for admission to this School, except as hereafter stated, must pass a written entrance examination in the following studies:—

(*a*) English. A composition of two hundred words upon some subject of general interest; the same to be criticised in relation to thought, construction, punctuation, spelling, and handwriting. The subject for this examination in 1905–1906 will be

chosen from the following:—(1) Shakespeare's Merchant of Venice; (2) Thackeray's Henry Esmond; (3) Burke's Speech on Conciliation with America; (4) Scott's Ivanhoe. Every candidate is expected to have read intelligently all the books prescribed.

(*b*) Algebra: such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

(*c*) Plane Geometry.

(*d*) Physics: such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

(*e*) Latin: a sight translation of such elementary Latin as is usually included in one year of study; as, for example, the first fifteen chapters of Caesar's Commentaries; also the translation into Latin of easy English sentences involving the same vocabulary.

Students who fail in one or more of these subjects may be admitted, subject to condition; but no student will be allowed to begin his second year whose entrance conditions remain unsatisfied.

Exceptions:—Graduates of high and preparatory schools will be admitted on presentation of approved entrance certificates. Also, students holding certificates of entrance to a college or university, those holding the Regents' certificate of the State of New York, and graduates of a college or university will be admitted without examination. The institutions, however, issuing certificates must be accredited as standard by the community within which they are located.

FOR ADVANCED STANDING

Students who have taken courses in other accredited dental schools are admitted to advanced classes upon presenting satisfactory evidence that they have passed the examinations required for the class they desire to enter.

FOR PROMOTION

Students who have passed a majority of the examinations of the first-year class, and all entrance conditions, may be promoted to the second-year class. Students who have passed all first-year and a majority of the second-year examinations may be admitted to the third-year class; but no student will be promoted to the fourth-year class who has not passed all the first and second-year examinations, and a majority of those of the third year.

The Faculty reserve the right to change these requirements from time to time without further notice.

FOR GRADUATION

Candidates for the degree of Doctor of Dental Medicine must have fulfilled the following requirements: —

1. They must present a certificate that they are twenty-one years of age and of good moral character.

2. They must have attended at least three full courses of lectures in some accredited dental school, the last of which shall have been at this School, and no two courses in the same twelve months.

3. They must have passed all the examinations required, and have satisfied the professors of operative and prosthetic dentistry of their ability to meet satisfactorily the requirements of the profession. They must also deposit with the Secretary of the Faculty a satisfactory specimen of mechanical work, prepared during the course under the supervision of the prosthetic department.

4. They must have satisfactorily dissected under the direction of a demonstrator of anatomy.

5. They must have paid all fees before the final examinations.

EXAMINATIONS

There are two periods of examination held each year in the School building. Examinations are in writing, and are held during the week previous to the opening of the regular course of lectures in the fall, and at the close of the course in the spring.

The fall examinations are for

(*a*) Students commencing the study of dentistry.
(*b*) Students applying for advanced standing.
(*c*) Students who failed in the spring.

The spring examinations are for promotion and graduation.

The entrance examinations will be held at 10 A.M. on Monday, June 12, 1905, and on Saturday, Sept. 23, 1905.

All students who intend taking any of the examinations must register their names with the Secretary, on or before a date to be announced upon the bulletin.

Students who have failed twice in the examination upon a subject will not be admitted to a third examination without repeating the course in that subject and paying a fee of twenty dollars.

The examinations are as follows:

First Year. *Finals* in Anatomy, Physiology, General Chemistry, Histology, and Elementary Hygiene.

Progress in Clinical and Prosthetic Dentistry.

Second Year. *Finals* in Operative Technics, Materia Medica, Pharmacology, Dental Chemistry, Pathology, Bacteriology, and Dental Histology.

Progress in Operative Dentistry, Clinical Dentistry, and Prosthetic Dentistry.

Third Year. *Final* in Oral Surgery.

Progress in Orthodontia, Theory and Practice of Dentistry, Operative Dentistry, Clinical Dentistry, and Prosthetic Dentistry.

Fourth Year. *Finals* in Theory and Practice of Medicine, Theory and Practice of Dentistry, Orthodontia, Operative Dentistry, Clinical Dentistry, and Prosthetic Dentistry.

TEXT BOOKS

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy.—Gray, Cryer's Internal Anatomy of the Face, Weisse, Quain, Morris, Black's Dental Anatomy.

Physiology.—Syllabus as guide to experiments, Stewart's Manual, American Text Book, Landois, Brubaker, Kirke, Porter, Verworn.

Chemistry.—Simons's Manual, Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis, Mitchell's Dental Chemistry.

Dental Histology and Microscopy.—Syllabus, Schäfer's Essentials in Histology, Stohr's Histology, Tome's Dental Anatomy (latest edition).

Pathology.—Syllabus, Miller's Micro-Organisms of the Human Mouth, Burchard's Dental Pathology.

Hygiene.—Egbert's Hygiene and Sanitation.

Materia Medica and Therapeutics.—Hare, Wood, Cushny, U. S. Dispensatory, Gerrish's Prescription Writing.

Practice of Surgery.—Park's System, Marshall's Injuries and Surgical Diseases of the Jaws, International Text-book of Surgery.

Dental Science and Operative Dentistry.—Kirk's Operative Dentistry, Garretson's Oral Surgery, Black's Dental Anatomy, Weeks's Operative Technics, American System of Dentistry, Harris's Practice of Dental Surgery, Taft's Operative Dentistry.

Prosthetic Dentistry.—Essig's American Text-book of Prosthetic Dentistry, Richardson's Mechanical Dentistry, Evans's Crown and Bridge Work, Gilbert's Vulcanite and Celluloid.

Bacteriology.—Abbott, Woodhead, Sternberg.

Medical Dictionary.—Dunglison.

EXPENSES

The tuition is $125.00 for each year. Anatomical material is supplied to the student at cost.

Postgraduate fee for graduates of other schools . .	125.00
Single course	30.00
Postgraduate fee for graduates of this School . . .	60.00
Single course	20.00

The fees may be paid in instalments, if desired, in which case $65 must be paid before October 15, and $65 before February 1.

No student will be admitted to the exercises of the first half of the term who has not paid the first instalment, and no student will be admitted to the exercises of the second half who has not paid the fees in full.

No student will be allowed to take any of the final examinations until the Bursar certifies that all fees or charges of every kind are settled.

The Bursar of the College will be at the School for the purpose of collecting fees, on Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from Oct. 1 to June 1.

There are no scholarships connected with the School.

The expenses of living in Boston vary according to the habits and desires of students, and need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained near the school at from $4 to $7 a week. Near the school building are several excellent boarding places charging moderate prices. Students will not be allowed to occupy rooms in the city that are not approved by the Faculty.

General Information

The Tufts College Dental School is a member of the National Association of Dental Faculties, and conforms to its rules, as well as to those of the National Association of Dental Examiners.

All students must be registered and in attendance within ten days after the commencement of lectures.

SESSIONS

The annual course of lectures begins on the last Wednesday in September of each year, and continues until the last Wednesday in May. The session of 1905-1906 will commence Wednesday, September 27, 1905, at 3 P.M.

VACATIONS

There are no exercises at the School during three days at Thanksgiving, and the weeks of Christmas and Easter, nor upon Washington's Birthday, Patriots' Day, and Memorial Day.

APPLICATIONS

Students intending joining the School for the first time must obtain from the Secretary an application blank, which they are required to fill out and return to him.

REGISTRATION

The registration is required of all students, yearly. Properly filled registration blanks for the year of 1905-1906 must be deposited with the Secretary on or before October 6, 1905.

ENTRANCE EXAMINATIONS

For the session of 1905-1906 the entrance examinations will be held at the School on Monday, June 12, 1905, and Saturday, September 23, 1905. Students conditioned in entrance requirements must remove their conditions upon those dates.

Requests for the annual Announcement, and all other communications relating to the business of the school, should be addressed to the Secretary, CHARLES P. THAYER, A.M., M.D., Tufts College Dental School, Boston, Mass.

Summer Courses

The following laboratory subjects are offered during the summer months:—

PHYSIOLOGY

A course in physiology will be given during the months of June and July. While the work will consist chiefly of laboratory exercises, it will also include a number of lectures and recitations adequate to the outlines and basal principals of physiology. The fee for this class will be twenty dollars.

HISTOLOGY

A summer course in histology will be given under the direction of Professor Bates. Particulars as to the scope of this work, and the fee, may be learned upon application to Dr. Bates.

THE BROMFIELD-PEARSON SCHOOL

The Bromfield-Pearson School

BOARD OF INSTRUCTION

ELMER H. CAPEN, D.D., PRESIDENT

GARDNER C. ANTHONY, A.M., DEAN
Professor of Technical Drawing

SAMUEL C. EARLE, A.M.
Assistant Professor of English

GEORGE F. ASHLEY
Instructor in Drawing

PHILIP M. HAYDEN, A.B.
Instructor in French

CHARLES E. STEWART, S.B.
Instructor in Shopwork

HERBERT M. MORLEY, M.S.
Assistant in Mathematics

The Bromfield-Pearson School

The Bromfield-Pearson School is intended to meet the wants of young men whose preparation for an Engineering course may be deficient in one or more of the required branches, but whose practice and experience in the applied part of Engineering may qualify them to pursue college work while making up these deficiencies. By this means an engineering education is made possible to those who may have been deprived of the opportunities for obtaining the necessary preparation, or who may have allowed considerable time to elapse between the high school and the college course. A mature mind, industrious habits, and a keen appreciation of the value of the higher education in engineering are essential qualifications for engaging in this work.

As it is the intention of the Trustees to limit the membership to those earnest and somewhat mature students who cannot afford the time ordinarily required in the fitting school, candidates will not be received from manual training and high schools.

There is no prescribed course of instruction, the studies being changed from year to year to meet the varying needs of the classes. It is generally possible, however, to review all of academic algebra, or plane and solid geometry, in one year. The entrance requirement in French can also be met in one year, and elementary work is given in English.

General Information

ADMISSION

Students intending to join the School must obtain from the Dean an application blank, which they are required to fill out and return. On receipt of this statement they will be informed as to the conditions of entrance and the program of studies which it will be possible to pursue.

REGULATIONS

Students are subject to all of the rules governing members of the College.

All preparatory work must be completed during the year, as no student will be admitted to the School for more than one year.

Students admitted to college classes will be required to obtain a somewhat higher per cent. than the minimum requirement for engineering students.

On the satisfactory completion of the preparatory work students will be given a certificate of admission to the College. They will also receive full credit for all college work done toward a degree.

The President and the Dean have final authority concerning admission, promotion, and discipline.

EXPENSES

The tuition fee is one hundred and twenty dollars per year, payable as follows: sixty dollars on or before October 15, and the remainder on or before March 15.

No part of the tuition fee will be refunded to pupils who for any reason withdraw from the school before the close of the term for which the fee is paid.

Students board in commons or in private families at $4.00 to $5.00. Furnished rooms may be had at $1.50 or $2.00 a week. Other expenses vary with the economy of each student. Students living in the College dormitories furnish their own rooms.

The following estimates represent the fixed annual expenses:—

Tuition	$120.00	$120.00
Half-room rent	15.00	75.00
Board, $4.00 to $5.00 a week (36 weeks)	144.00	180.00
Physical training		10.00
Books, instruments, and supplies	15.00	25.00
Total	$294.00	$410.00

For other information address GARDNER C. ANTHONY, Dean of the Bromfield-Pearson School, Tufts College, Mass.

The Harpswell Laboratory

INSTRUCTORS

J. STERLING KINGSLEY, S.D.
Director, and Professor of Biology

FRED D. LAMBERT, PH.D.
Assistant, and Instructor in Natural History

In 1898 summer instruction in biology was given at South Harpswell, Maine, and in 1901 the college erected a small laboratory at that point, enlarging it in 1902. The location is admirably adapted for biological research, since the fauna of Casco Bay is extremely rich. The laboratory is equipped with boats, dredges, glassware, apparatus, and reagents, for study on the lines of anatomy and embryology. There is also a small library of the most important works.

The laboratory will be open in 1905 from June 15 until the middle of September. Instruction will be given in zoology, botany, and beginning research. Instruction will commence July 4, and will continue six weeks. For each subject a fee of twenty-five dollars will be charged. Credit will be given for work completed as if the work had been taken at the College. Besides, there are a few private rooms for research students, the fee for these being fifteen dollars for the season.

South Harpswell is two hours by steamer from Portland. It is at the extremity of a narrow peninsula ten miles in length, and has a cool climate. There are several hotels and boarding houses where board and rooms may be had at five dollars a week and upward.

A list of the students at the Harpswell Laboratory during the summer of 1904 follows the Register of Students.

For circulars and other information concerning the Harpswell Laboratory, inquiries should be directed to PROFESSOR J. S. KINGSLEY, Tufts College, Mass.

DEGREES AND HONORS

1903-1904

Forty-Eighth Annual Commencement

June 15, 1904

DEGREES CONFERRED

HONORARY

Doctors of Laws

JULIA WARD HOWE
WILLIAM HENRY MOODY

Doctors of Sacred Theology

JOSEPH ESTLIN CARPENTER
CHARLES AUGUSTUS SKINNER
WILLIAM HOOPER DEARBORN
JOHN VANNEVAR
RUFUS AUSTIN WHITE

Doctors of Letters

GEORGE HENRY CONLY
EDWARD HENRY CLEMENT

Masters of Arts

CHARLES EWELL MORRISON
J. FRANK WELLINGTON
ARTHUR ELLERY MASON

IN COURSE

Bachelors of Arts

CHARLES FRANKLIN BERRY, JR.
WILLIAM WILGUS BOWERS
BERTHA BRAY
COMPTON DURLIN BRAY
ALICE WELLINGTON CLARK
GEORGIANA CLARK
JOHN WILLIAM CLIFFORD
GUSSANDA COUNTWAY (with Honors in Latin)
MERTIE CROWELL
HELEN CLARE CURTIS (with Honors in Latin)
ELMER MOREY DRULEY
HAROLD FAY
DENNIS CAMILLE AMEDEE GALARNEAU

BETSEY BARKER HARMON
THOMAS PATRICK HENNELLY
ROBERT WILLIAM HILL (with Honors in History)
BLANCHE HEARD HOOPER
GEORGE ROBLEY HOWE (extra ordinem, as of the class of 1882)
FLORENCE LILLIAN McALLISTER
CHARLES EDWARD McMAHON
JOSEPH EATON MASON
LEON RYDER MAXWELL (with Honorable Mention in English)
FRED ATKINS MOORE
RAYMOND KURTZ MORLEY (with Honors in Mathematics)
LEWIS WINSLOW NEWELL
CLARA ELIZABETH PARKER (with Honors in History)
JESSIE MERRILL PARKER (with Honors in Mathematics)
GEORGE EDWARD PEARSON
ETHEL MAY PHILLIPS (with Honorable Mention in English)
MERTIE BELLE PRESTON
HARRY HERBERT RICHARDSON
HARRIET NORMA ROBERTS (with Honors in Latin)
CLARA REBECCA RUSSELL
ELEONORE HENRIETTE THEKLA SANDER
ANNIE LOUISA SANDERS
CLARENCE PRESTON SCOBORIA
RACHEL JOSEPHINE SPAULDING (with Honorable Mention in English)
FRANK LESLIE SHAW
CLARA MAY STANDISH
DONALD SPENCER TEAGUE
RUTH TENNEY (with Honors in Greek)
GRACE TITCOMB
DELMAR EVERETT TROUT
FLORENCE AUGUSTA TUFTS (with Honors in English)
FLORENCE HELEN WALKER
CLARENCE ELMORE WATKINS

Bachelors of Science in Civil Engineering

ALFRED MOORE BOND
WILLIAM VICTOR BURNELL
ERNEST SPARRELL DRAPER (with Honorable Mention in Civil Engineering)
SHERBURNE HILL
JAMES HENRY HOOD
THEODORE WHITE NORCROSS (with Honorable Mention in Civil Engineering)

ERNEST ALEXANDER SAUNDERS
EDWARD HOLTON WOOD (with Honorable Mention in Civil Engineering)

Bachelors of Science in Electrical Engineering

JAMES WHITON CHISM (with Honors in Electricity)
FREDERICK JOSEPH HOWARD DOHERTY
PATRICK WILLIAM FLEMING
OSCAR EDMUND FORREST
WILLIAM EVERETT HAZELTINE
MELVILLE SMITH MUNRO (with Honors in Electricity)
GEORGE WALTER ROWBOTHAM (extra ordinem, as of the class of 1897)

Bachelor of Science in Mechanical Engineering

HENRY FARNSWORTH PERKINS

Bachelor of Science in Biology

ALFRED EMERSON PREBLE

Bachelor of Science in General Science

MURRAY HARDING HUNT

Bachelor of Science in Medical Preparatory

MYRON WHITMORE MARR

Doctors of Medicine

HARRY DANIEL ABBOTT
JOSEPH LOUIS AMENO
JOHN HAMMOND ANDERSON
WILFRID LOUIS BIRON (cum laude)
FRANK ROBERT BRADY
DANIEL JOSEPH BUCKLEY
FRED GEORGE BUSHOLD
MARGARET ELIZABETH CARLEY
JOHN ALOYSIUS CECONI
CLARENCE LUTHER CHANDLER
JAMES SMALLEY CHASE
LAWRENCE MILTON CHASE
INEZ LOUISE CLARKE
FREDERICK HALL COREY
EDWARD JOSEPH DAILEY
JOHN HENRY DAVIS
LUTHER GOULD DEARBORN, JR.
EUDORA WINIFRED FAXON
THOMAS LAWRENCE GETTINGS

HENRY HARRISON
GERTRUDE WENTWORTH HASTINGS
LUCINDA MARY-BELLE HOLT (cum laude)
LESTER WALLACE HORNE
JOHN JOSEPH KELLY
WALTER CLEMENT KENNEY (cum laude)
NATHAN NOAH LEVINS
BERNARD FRANCIS McGAFFIGAN
WILLIAM J. McGURN (cum laude)
PATRICK JOSEPH MEEHAN
CHARLES AUGUSTUS MURPHY
THOMAS WILLIAM MURPHY
LEO THOMAS MYLES
WILLIAM FRANCIS O'BRIEN
ALICE MARIAH PATTERSON
CHARLES VALENTINE PEASE
ELIAS HARRIS POFCHER
THOMAS IGNATIUS REILLY
PHILIP EATON ROBINSON
J. COLLIER ROBINSON (cum laude)
RICHARD DEIDRICH SCHMIDT (cum laude)
HORACE DARLING SEYMOUR (cum laude)
CHARLES EDWIN SHAY
WILLIAM MORGAN SMITH
HARRY MARR STOODLEY (cum laude)
CORNELIUS AUGUSTINE SULLIVAN
FREEMAN AUGUSTUS TOWER
THOMAS VICTOR TOOHEY
JOSEPH FRANCIS WALCH
ANNIE MARIE WALLACE (cum laude)
EDITH ESTY WOODILL (cum laude)

Doctors of Dental Medicine

CHARLES ASKOWITH
WILSON DARLING BARRON
THERESE EVA BONNEY
ERNEST PHIPPS BRIGHAM
ERNEST ROBBIN BROOKS
CHARLES DREW BROWN
JANE GRAUPNER BUNKER
CHARLES CARTER BUTLER
IVAN ALEXIS TEOFIL CENTERVALL
CAREY ROSCOE CHESTER
LESTER DEARBORN CHISHOLM

CHARLES PETER CLARKE
STEPHEN BARTHOLOMEW COLLINS
JOSEPH BENJAMIN DAVIS
MYRTON OMER DAVIS
DANA EMERSON DEARING
JAMES JOSEPH FENELON
MILES HARTLEY FOWLER
MICHAEL JOSEPH FRAHER
MELVILLE F. FRANCIS
JOHN JOSEPH GIBBONS, JR.
EDGAR FRANK GILPATRIC
WILLIAM ALLEN GOBIE
LYNN MERTON GOODRICH
WALTER HENRY GRANT
HENRY HERSEY HARRISON
FREDERICK JAMES HART
THOMAS HENNESSY, JR.
GEORGE ALBERT JENKINS
ELTON SUMNER JEWETT
ALFRED LEROY JOHNSON
JOHN JOSEPH KENNEDY
MAUD A. E. KENNEY
JEANETTE EMMA KING
MAURICE GARFIELD LUCE
CHARLES KETTLEWELL McGLEW
GEORGE FRANCIS McINNES
JOHN FRANCIS MACKEON
JOHN RUSSELL McKINNON
JOHN AUGUSTINE MAGUIRE
JAMES SIEMEL MANSTER
PHILIP FREDERICK MORAN
DAVID JOSEPH MULLIN
OSCAR LEON PERRAULT
EZRA BARKER PIKE, JR.
NATHANAEL MESERVEY PRESTON
JOHN JOSEPH RILEY
JOSEPH BERNARD ROCKETT
MORRIS ROMANOW
CLARENCE ENDICOTT SMITH
HARRY MONFORD SMITH
ALFRED GATZOR STEGELMAN
ERNEST SHERMAN STORY
THURE GUSTAF STREIJFFERT

CHARLES ARTHUR THOMAS
STANLEY BURTON THORBURN
EUGENE URBANE UFFORD
ERNEST LEAVITT WELLS
EUGENE ALFRED WHITTREDGE

Masters of Arts

ALBERT CHESTER BLAISDELL (Mathematics)
Thesis: "On the Solutions of Cubic Equations"

ETHEL PARKER HUNTING (English)
Thesis: "A Study of Henrik Ibsen"

GUY ELWOOD MARION (Biology)
Thesis: The Musculature of the Mandibular and Branchial Regions of Acanthias Vulgaris and Raia Erinacea"

RAYMOND KURTZ MORLEY (Mathematics)
Thesis: "The Four-Point and the Four-Side in Various Notations"

ARTHUR MURPHY, JR. (Chemistry)
Thesis: "On the Action of Chlorine and Carbontetrachloride on Non-Metallic Oxides"

Masters of Science

GEORGE ANDREW BATES
Thesis: "The Histology of the Digestive Tract of Amblystoma Punctatum"

FRED WARREN TEELE
Thesis: "Electrical Engineering in the Tropics"

Doctor of Philosophy

ARTHUR BECKETT LAMB (Chemistry)
Thesis: "The Isomerism of Ethylcoumaric and Eythlcoumarinic Acids"

Commencement Parts

RAYMOND KURTZ MORLEY, Cand. A.B.: "The Industrial Conflict and Some Methods of its Solution"

JAMES WHITON CHISM, Cand. B.S.: "The Cultural Value of an Engineering Education"

FREEMAN AUGUSTUS TOWER, Cand. M.D.: "The Sanitary Problem of the Panama Canal"

LEON RYDER MAXWELL, Cand. A.B.: "An American Academy"

Awards of Prizes, 1903-1904

Entrance Examination Prizes

ETHEL LUELLA FULLER (1)
AIMEE EDNA CURRIER (2)

Goddard Prize in Latin

AUSTIN MELVIN WORKS

Goddard Prize in Mathematics

MARY LOUISE DOHERTY

Wendell Phillips Prize Scholarship

RUDOLPH WINFIELD CURRIER

Winners of Prizes in the Annual Debate

THE KNOWLTON DEBATING CLUB

Best Individual Debater

JAMES WHITON CHISM

Rhetorical Prizes

First Division

ERNEST GEORGE METCALFE (1)
EUGENE JOSEPH SULLIVAN (2)
HAROLD CLIFFORD HASKELL (2)

Second Division

FRED ROSS MACKENZIE (1)
FRED ATKINS MOORE (2)

Greenwood Prizes in Oratory in the Divinity School

CHARLES HOSEA TEMPLE
SIDNEY JOEL WILLIS
NELSON LYMAN LOBDELL

REGISTER OF STUDENTS

Graduate Department

Fellows

THYNG, FRED WILBUR — *Ross Corner, Me.* — East Hall, 10
A.B., Colby, 1902 A.M., Tufts, 1903 Olmstead Fellow in Natural History Third Year Biology.

Resident Students

HAPGOOD, ERNEST GRANGER — *Newton*
A.B., 1901 Third Year Economics

MAXWELL, LEON RYDER — *Medford* — Δ T House
A. B., 1904 First Year English

PEARSON, GEORGE EDWARD — *Somerville* — *325 Highland Ave.*
A. B., 1904 First Year History and Public Law

POLK, ELLERY CHANNING — *Tufts College* — *102 Curtis St.*
A. B., 1901 First Year History and Public Law

Undergraduate Student

(doing advanced work as candidate for a higher degree)

WORKS, AUSTIN MELVIN — *Somerville*
German

Courses in Arts and Sciences

[In the following list the course pursued by each student is indicated by the Italic letters immediately following the name. The signs used are as follows: courses leading to the degree of A.B., *ab*; to the degree of Ph.B., *ph*; to the degree of S.B.,—in Civil Engineering, *ce*; in Electrical Engineering, *ee*; in Mechanical Engineering, *me*; in Chemical Engineering, *ch e*; and in the first year of the Engineering Courses, before the differentiation of studies, *e*: to the degree of S.B., through the Science Courses,—in General Science, *sc*; in Biology, *bi*; in Chemistry, *ch*; and the Medical Preparatory, *mp*.

The third column records the home address. The fourth column gives the address at Tufts College, unless the street is printed in Italics, in which latter case it is a part of the home address.]

Senior Class

Armstrong, Elias Benjamin	*ab*	*Waltham*	Δ T Δ House
Atsatt, John Thornton	*ab*	*Mattapoisett*	A T Ω House
Bailey, Vesta Louise	*ab*	*W. Somerville*	*50R College Ave.*
Bean, William Wendell	*ee*	*W. Medford*	*34 Canal St.*
Bidwell, George Leslie	*ch*	*Jamaica Plain*	West, 2
Bodge, Harold Heath	*ee*	*Westbrook, Me.*	Dean, 3
Bowker, Ella Wallace	*ab*	*Somerville*	*2 Hillside Ave.*
Bray, Compton Durlin	*ce*	*Tufts College*	*98 Professors Row*
Burnham, Fred Walker	*ab*	*Williamstown, Vt.*	West, 18
Calderwood, Mellen Greely	*ab*	*Portland, Me.*	West, 26
Chase, Alfred Whitman	*ee*	*Cambridge*	*43 Highland Ave.*
Chevalier, Louis	*ce*	*Naugatuck, Conn.*	Δ Υ House
Claus, Henry Turner	*ab*	*Saugus*	Δ T Δ House
Crockett, Ernest Dana	*me*	*Dexter, Me.*	Δ Υ House
Dodge, Waldo Edgar	*ce*	*Hyde Park*	A T Ω House
Dods, Francis Alexander	*ee*	*Somerville*	*24 Partridge Ave.*
Donovan, Jeremiah John	*ee*	*Randolph*	
Dow, Roy Gay	*ee*	*Bridgton, Me.*	*37 Sawyer Ave.*
Ewell, Walter Warren	*ce*	*Medford*	*236 Salem St.*
Farnum, Carrie Alice	*ab*	*Marlboro*	Metcalf, 4
Farrrar, Edward Leslie	*ce*	*Assinippi*	East, 10
Ford, Herman Flagg	*ce*	*Danville, Me.*	West, 1
Gammon, Robert Clair	*ce*	*Lynn*	*77 Hawthorne St.*
Garton, Florence Harriet	*ab*	*W. Somerville*	*113 College Ave.*
Gordon, Harold Loring	*ce*	*Auburndale*	Δ Υ House
Guild, Emily Elizabeth	*ab*	*Brattleboro, Vt.*	Start House, 2
Harrington, Charles Ernest	*ce*	*Lynn*	Z Ψ House
Jenks, Daniel Ashley	*ab*	*Holyoke*	Dean, 9

Loring, Seth Arthur	*ab*	*Portland, Me.*	West, 7
Lovejoy, Arthur Waldo	*ab*	*Lowell*	Θ Δ X House
Lowe, George Albert, Jr.	*ce*	*Rockport*	A T Ω House
McCoy, Florence Lydia	*ab*	*Somerville*	Metcalf, 9
Marshall, Wilnah Virginia	*ph*	*New Salem*	Metcalf, A
Mayhew, Alfred Boardman	*ce*	*Charlemont*	West, 2
Milner, John George	*ee*	*Somerville*	West, 12
Morrison, Donald	*ab*	*Skowhegan, Me.*	West, 10
Munroe, Carrie Josephine	*ab*	*Somerville*	*70 Myrtle St.*
Parks, Ralph Silas	*ab*	*Stow*	Δ T Δ House
Perry, Luther Packard	*ee*	*Shelburne Falls*	West, 2
Powers, Lorin Charles	*ab*	*Washington, D. C.*	West, 28
Sanders, Amalie Cecilia Dorothea	*ab*	*Cambridge*	*31A Sacramento St.*
Seery, Francis Joseph	*ce*	*Waterbury, Conn.*	East, 3
Smith, Frederic Franklin	*bi*	*Buzzards Bay* 11 Fairmount St., Medford Hillside	
Stone, Charles Henry, Jr.	*sc*	*Haverhill*	East, 12
Swansey, Katherine Josephine	*ab*	*Somerville*	*102 Prospect St.*
Sweetser, Sidney Pulsifer	*ab*	*Philadelphia, Pa.*	West, 27
Symmes, Gertrude Locke	*ab*	*Winchester*	*77 Main St.*
Taylor, Mabelle Woodbury	*ab*	*Hudson*	*18 High St.*
Temple, Charles Hosea	*ab*	*Hinsdale, N. H.*	Paige, 1
Tompson, George Morris, Jr.	*ce*	*Wakefield*	
Viles, Blynn Fred	*ee*	*Medford*	*81 Main St.*
Warner, George Loring	*ab*	*Palmer*	Z Ψ House
Wheeler, Grace Inez	*ab*	*Milan, N. H.*	Start, 3
Whitehouse, Wendell Lewis	*ch e*	*Somerville*	*74 Glenwood Road*
Whitney, Howard Rogers	*ce*	*Somerville*	*107 Sycamore St.*
Williams, Arthur	*ab*	*Charlestown*	*1 Prospect St.*
Wilson, Harry Percival	*ce*	*Worcester*	West, 7
Wise, William Mason	*ab*	*West Newton*	Θ Δ X House
Woodbury, Charles Harlow	*ab*	*Auburn, Me.*	Z Ψ House
Woodward, Frank Coy	*ce*	*East Pepperell*	Curtis, 7
Works, Austin Melvin	*ab*	*Somerville*	*214 Medford St.*

Junior Class

d'Amaral, Joseph	*ee*	*Lagoa, Azores Islands* 155 College Ave., Somerville	
Ames, Harvey Libby	*me*	*Somerville*	*120 Perkins St.*
Boardman, Seth Howard	*ce*	*Georgetown*	A T Ω House
Buckley, James Robert	*ab*	*Manchester, N. H.*	West, 14
Buxton, Sara Lucy	*ab*	*Somerville*	*286 Highland Ave.*
Chandler, Eva Lillian	*ab*	*Brattleboro, Vt.*	Metcalf, 7

Chapin, Charles Mathews	*ab*	*Rockland, Me.*	West, 26
Cheney, Genevieve Henrietta	*ab*	*Delevan, N. Y.*	Metcalf, 8
Clement, Fannie May	*ab*	*Everett*	*4 Dean St.*
Coupal, James Francis	*mp*	*Everett*	*35 Wellington Ave.*
Cousins, Clarence Edwin	*ab*	*Salem*	East, 11
Crowell, Freeman Shedd	*ee*	*Lowell*	West, 22
Currier, Rudolph Winfield	*ab*	*Swampscott*	East, 13
Cutler, Leon George	*ee*	*N. Montpelier, Vt.*	West, 20
Dix, Leon Edward	*ce*	*Hartford, Conn.*	Δ Τ Ω House
Dolloff, Annie Louise	*ab*	*New Sharon, Me.*	Start, 5
Douglas, Jerome Harvey	*ch*	*Hull*	West, 22
Dustin, Maurice Nathaniel	*ce*	*Dexter, Me.*	Δ Τ House
Edwards, Alice Hayward	*ab*	*Stoughton*	Metcalf, 13
Ellis, Herbert Cram	*ce*	*Detroit, Mich.*	Ζ Ψ House
Farnsworth, Dana Tufts	*ab*	*Taunton*	West, 29
Fisher, William Ernest	*ee*	*W. Somerville*	*26 Hancock St.*
Fogg, Ralph Justin	*ce*	*Lynn*	East, 13
Gay, George Willard, Jr.	*ab*	*Norwood*	Δ Τ House
Graves, Otho McCarroll	*ce*	*North Adams*	West, 23
Gudge, Benjamin Joseph	*ee*	*White City, Kan.*	Dean, 2
Hall, Alfred Vargrave	*ab*	*Peru, Me.*	Δ Τ House
Hanscom, Henry Blake	*ab*	*Leeds Junction, Me.*	Δ Τ House
Haskell, Harold Clifford	*ab*	*Rockland, Me.*	West, 20
Hayes, Chester Adams, Jr.	*ce*	*N. Berwick, Me.*	Α Τ Ω House
Hayes, Will Francis	*mp*	*Georgetown*	Α Τ Ω House
Hickey, Edwin Ernest	*me*	*Cambridge*	East, 17
Inglis, Henry Baxter	*ee*	*Grosse Isle, Mich.*	Ζ Ψ House
Jackson, Minnie Wallis	*ab*	*Medford*	*47 Fulton St.*
Johnson, Phebe Chandler	*ab*	*Spencer*	Metcalf, 13
Jones, John Paul	*ee*	*Woburn*	*662 Main St*
Judkins, Agnes Frances	*ab*	*Merrimac*	Metcalf, 16
Knight, Herbert Carr	*ce*	*Woodfords, Me.*	West, 30
Knowlton, Edward Allen	*mp*	*West Newton*	Θ Δ Χ House
Lamb, Norval Edmund	*me*	*Attleboro*	Dean, 6
Lendall, Harry Nelson	*ce*	*Lynn*	West, 29
Mackenzie, Fred Ross	*ab*	*Cliftondale*	West, 4
Mann, Bertha Hill	*ab*	*Norway, Me.*	Start, 6
Merrill, Carle Jewett	*me*	*Somerville*	*339 Summer St.*
Metcalfe, Ernest George	*ab*	*Brooklyn, N. Y.*	Ζ Ψ House
Michael, Herbert Ledlie	*ab*	*Kingston, N. Y.*	Θ Δ Χ House
Miller, George Stewart	*ab*	*No. Andover*	East, 11
Mullen, John Joseph	*ce*	*Wellesley*	Δ Τ Δ House
Nash, Curtis Whithed	*ab*	*Winchester*	Ζ Ψ House
Noyes, Marion Temple	*ab*	*W. Somerville*	*22 Dover St.*

Nye, Laila Campbell	*ab*	*W. Somerville*	*33 Electric Ave.*
Page, Arthur Smith	*ee*	*Everett*	*36 Dean St.*
Paine, Alice Peabody	*ab*	*Groveland*	Start, 1
Phillips, Leslie Blaine	*ee*	*W. Somerville*	Δ T House
Priest, Alice Eaton	*ab*	*Canton, N. Y.*	Start, 1
Proctor, Fred Willis	*ce*	*Wilton, N. H.*	Δ T Δ House
Ringdahl, Frederick Wilhelm	*ab*	*Medford Hillside*	West, 16
Roberts, Charles Fred	*ce*	*Caribou, Me.*	Δ T House
Saunders, Louise Melbourne	*ab*	*Somerville,24 Powder House Terrace*	
Shearer, Gordon Grant	*ee*	*Somerville*	*44 Morrison Ave.*
Sibley, Ruth Annie	*ab*	*Spencer*	Metcalf, 12
Smead, Alfred Felton	*me*	*Greenfield*	West, 17
Smith, Richard Curtis	*ce*	*Medford*	Δ T House
Speirs, Ernest L	*ce*	*Westbrook, Me.*	Δ T House
Steele, Martha Taylor	*ab*	*Stoughton*	Metcalf, C
Taylor, Chester Emerson	*me*	*Clinton*	Δ T House
Tenny, Miriam	*ab*	*Auburn, Me.*	Metcalf, 6
Tewksbury, Ella May	*ab*	*Lexington*	Metcalf, 5
Tripp, Angie May	*ab*	*Woburn*	*2 Eastern Ave.*
Vickery, Reina Gladys	*ab*	*Lexington*	*19 Percy Road*
Wellman, Hugh Horace	*ce*	*Westminster West, Vt.*	West, 18

Sophomore Class

Alvarenga, Francisco Bento de	*ee*	*Sao Paulo, Brazil*	West, 11
Backus, Florence Erie	*ab*	*Somerville*	*67 Curtis St.*
Backus, John Alexander	*me*	*Somerville*	*67 Curtis St.*
Bacon, Theodore Sheldrake	*ce*	*Waltham*	*22 School St.*
Barry, Walter Vincent de Paul	*ee*	*Portland, Conn.*	East, 16
Bartlett, Gertrude Elisabeth	*sc*	*Kingston, N. H.*	Start, 3
Bean, Charles Franklin Kingsbury	*sc*	*W. Medford*	*51 Harvard Ave.*
Benoit, Armand William	*ce*	*Lawrence*	East, 24
Bertwell, Margaret May	*ab*	*W. Somerville*	*48 Cameron Ave.*
Blake, William Edwin	*ab*	*Huntington*	East, 4
Burrage, Alvah Lowell	*ce*	*Lowell*	East Hall, 18
Clare, Charles Henry	*ee*	*Quincy*	East, 6
Clarke, Bertrand Moody	*ab*	*Waltham*	West, 9
Cliff, Joseph Arthur	*ee*	*New Dorchester*	*67 Edson St.*
Coggan, Linus Child	*ab*	*Malden*	Dean, 8
Colbert, Leo Otis	*ce*	*Charlestown*	*34 Union St.*
Conner, Carlton Nudd	*ce*	*Lynn*	East, 30
Crawford, Irena May	*ab*	*North Dana*	Metcalf, 11
Cummings, George Smith	*ce*	*Lynn*	East, 30
Curtiss, Prudence	*ab*	*Hingham*	Start, 4
Davis, Clarence Benjamin	*ce*	*Lowell*	East, 18

Derry, Harold Woodard	*ee*	*N. Attleboro*	Δ T House
Dillingham, Alexander	*ee*	*Bridgeport, Conn.*	West, 27
Doherty, Mary Louise	*ab*	*Woburn*	*15 Monroe St.*
Dole, Henry Haile	*ee*	*Arlington*	West, 23
Douglas, Maude Geraldine	*ab*	*Hull*	Metcalf, 11
Drew, Philip Augustine	*ee*	*Portland, Maine*	West, 21
Drummond, Eva Alberta	*ab*	*Brattleboro, Vt.*	Start, 4
Duffey, Cornelius Francis	*ee*	*East Weymouth*	360 Columbus Ave., Boston
Dwelley, Charles Theodore	*ee*	*Arlington Heights*	*146 Park Ave.*
Farmer, Thomas Jefferson	*ab*	*Shirley*	Paige, 33
Flint, Lester Sylvanus	*e*	*Everett*	*16 Waverly Ave.*
Folsom, Josie Burbank	*ab*	*Medford*	*35 College Ave.*
Ganteaume, Henri Dicudonné Alphonse	*ce*	*Trinidad, B.W.I.*	West, 11
Hadley, Norris Edmund	*ce*	*W. Somerville*	*35 Conwell Ave.*
Hahn, Frances Anna	*ab*	*Everett*	*12 Bennett St.*
Hannah, Persis Dwight	*ab*	*Medford*	*53 Oakland St.*
Harris, George Wesley	*ab*	*Kansas*	West, 16½
Hatch, Fred Eugene	*ee*	*Kezar Falls, Me.*	9 Dearborn St., Medford
Horr, Howard Atkinson	*ee*	*Tufts College*	East, 22
Jeffers, Robert Buck	*ee*	*Chelsea*	West, 5
Jones, Chester Hardy	*me*	*Norwood*	East, 24
Killpartrick, Clarence Thomas	*ce*	*Lowell*	East, 20
Knowles, Charles H	*ce*	*Cambridge*	*16 Carver St.*
Knowlton, Frank Weston	*ee*	*Chelsea*	West, 24
Lakin, Roger	*ab*	*S. Braintree*	Dean, 5
Lewis, Frederick William	*me*	*Bethlehem, N. H.*	Δ T House
Matthews, John Ormsby, Jr.	*ab*	*Palmer*	West, 8
Means, Walter Kidder	*e*	*Lowell*	East, 20
Mergendahl, Titus Eugene	*ce*	*Kingston, N. Y.*	West, 3
Moore, Percy Roberts	*ab*	*Montgomery*	East, 4
Nason, Percy Durell	*ce*	*Bethlehem, N. H.*	East, 19
Neville, Gertrude Alena	*ab*	*Woburn*	*22 Kilby St.*
Norwood, Edgar Alva	*ee*	*Rockport*	85 Ferry St., Everett
Ober, Ernest Chester	*ee*	*Northeast Harbor, Me.*	West, 16
Orne, Marion Frances	*ab*	*Somerville*	*43 Fairmount Ave.*
Packard, Merton Foster	*ee*	*Marion*	East, 15
Peterson, John Ferdinand	*ce*	*Lynn*	West, 13
Phelan, John Joseph	*ce*	*Lowell*	East, 16
Porter, Bella Celia	*ab*	*Stoughton*	Metcalf, C
Rich, Marion	*ab*	*Chelsea*	Metcalf, 2
Sanborn, John Freeman	*ce*	*Newmarket, N. H.*	West, 15
Sanborn, Levi Newell	*e*	*Hampton Falls, N.H.*	East, 14

Savage, Howard James	*ab*	*Meriden, Conn.*	West, 28
Shattuck, Ralph Cushman	*ce*	*Maynard*	East, 19
Smith, Hugh Wallace	*ab*	*Everett*	*565 Broadway*
Starrett, Arthur Rawson	*e*	*N. Andover*	East, 27
Sturtevant, Ethel Powys	*ab*	*Somerville*	*78 Columbus Ave.*
Sullivan, Eugene Joseph	*ab*	*Boston*	Δ T House
Svensen, Carl Lars	*ce*	*Medford*	*101 Winthrop St.*
Tarr, Harold Eugene	*e*	*Lowell*	
Tay, Samuel Wright	*ce*	*Medford*	*288 Forest St.*
Turner, Harlan Barzillai	*ee*	*Portland, Me.*	West, 24
Ungar, Frida Emily	*ab*	*Somerville*	*16 Norwood Ave.*
Warner, Willis Chauncey	*ee*	*Cromwell, Ct.*	East, 15
Wells, Gladys	*ab*	*Troy, N. Y.*	Metcalf, 14
Willy, Max Paul	*me*	*New Orleans, La.*	East, 32
Wilson, Edgar Perkins	*ch e*	*New Rochelle, N. Y.*	West, 8
Woodward, Herbert Watson	*ee*	*Somerville*	*171 Powder House Boulevard*
Wyckoff, Joseph Ray	*ab*	*Franklin*	Dean, 3

Freshman Class

Adams, Katharine	*ab*	*Hartford, Conn.*	Metcalf, 6
Alpaugh, Walter George	*e*	*Willimantic, Conn.*	West, 21
Averill, Harvey Eastman	*ab*	*Barre, Vt.*	Curtis, 12
Babbitt, Eugene Leslie	*e*	*Somerville*	East, 33
Bailey, Harold Percy	*e*	*Shelburne Falls*	Curtis, 3
Ballou, Ernest Arlon	*e*	*Portsmouth, N. H.*	East, 14
Barnes, Warren Herbert	*ab*	*Medford*	Δ T House
Bond, Amy Gardner	*ab*	*No. Woburn*	*19 Traverse St.*
Brooks, Leroy Rollins	*e*	*Medford*	*58 Medford St.*
Buchanan, Perley J	*e*	*Barre, Vt,*	West, 19
Burkhardt, Max	*e*	*Roxbury*	*14 Highland St.*
Burton, Elmer Arthur	*e*	*Somerville*	*2 Homer Sq.*
Callahan, John Frances	*e*	*Charlestown*	*15 Walker St.*
Carleton, Miriam Stanley	*ab*	*Lynn*	Metcalf, 10
Case, Ralph Edward	*e*	*Albany, N.Y.*	West, 19
Cate, Emily Morgan	*hs*	*Waltham*	*305 Lowell St.*
Clark, Frank Watkins	*e*	*Jamaica Plain*	Dean, 4
Clough, Ray William	*ch*	*East Braintree, Vt.*	East, 1
Cohen, Octavius Phillips	*e*	*Northport, L.I.*	East, 28
Currier, Aimée Edna	*ab*	*Everett*	*29 Hosmer St.*
Dailey, Marion Eleanore	*ab*	*Wakefield*	Metcalf, 10
Danforth, Charles Haskell	*bi*	*Norway, Me.*	11 Fairmount St., Medford Hillside

Danforth, Earle Henry	*ab*	*East Norton*	East, 29
Dickinson, Frank Leroy	*ch*	*Woodstock, N. B.*	West, 4
Doherty, James Thomas	*ee*	*S. Boston*	*173 K St.*
Dolbear, Mary Elizabeth	*sc*	*Tufts College*	*134 Professors Row*
Esteves, William	*e*	*Aguadilla, Porto Rico*	42 Chester Ave., Medford Hillside
Farnsworth, Ray Dwinell	*e*	*Taunton*	East, 25
Fickett, Elmer Edward	*e*	*Chelsea*	*18 Carmel St.*
Fraser, Carolyn Genesta	*ab*	*Somerville*	*16 Porter St.*
Fuller, Ethel Luella	*ab*	*Everett*	*63 Cottage St.*
Gardner, Harold	*e*	*W. Medford*	*28 Brooks St.*
Getchell, Charles Howard	*e*	*Somerville*	*36 Banks St.*
Goggin, Walter John	*ab*	*Gardner*	Dean, 11
Green, Walter Robbins	*e*	*Wilbraham*	West, 32
Greenwood, Alveda Frances	*hi*	*Somerville*	Metcalf, 2
Hammett, Frederick Simonds	*ab*	*W. Somerville*	*25 Windsor Road*
Harris, Henry Heritage	*e*	*Everett*	*8 Marion Place*
Herbert, Wilwyn Bert	*e*	*Boston*	West, 30
Hewitt, Frank Waldo	*e*	*Cambridge*	*81 Pemberton St.*
Holt, Klate M	*e*	*S. Woodstock, Vt.*	East, 34
Humphries, Ernest Rogers	*ab*	*Malden*	*18 Arlington St.*
Hunt, Ralph Waldo Emerson	*ab*	*Portland, Me.*	Paige, 15
Hunter, Lester Bradford	*e*	*Dorchester*	West, 30
Hussey, Allen Worthen	*e*	*Everett*	*59 Woodville St.*
Ingalls, James Leon	*me*	*Whitinsville*	East, 9
Jackson, John Perkins, Jr.	*ab*	*Medford*	*47 Fulton St.*
Johnson, Dora Lucille	*ab*	*Uxbridge*	Metcalf, 3
Johnston, Robert Smith	*e*	*New York, N. Y.*	East, 26
Jones, Carleton Parker	*ch*	*Somerville*	*51 Cherry St.*
Jouett, Blanche Isabelle	*ab*	*W. Somerville*	*37 Chester St.*
Ladd, Esther Evelyn	*ab*	*Malden*	*68 Brackenbury St.*
Lane, Clifford Warren	*e*	*Foxboro*	Curtis, 8
Leavitt, George Albert	*e*	*W. Medford*	East, 7
Leighton, Gracelyn Florence	*ab*	*Pittsfield, N. H.*	Start, 7
Little, Margaret	*ab*	*Somerville*	*106 Summer St.*
Lomax, George Chester	*ee*	*Somerville*	*7 Miller St.*
McFarland, Beatrice Mary	*ab*	*W. Somerville*	*21 Cedar St.*
Marshall, Marguerite Mooers	*ab*	*Kingston, N. H.*	504 Lebanon St., Melrose
Mason, Howard Crandall	*ab*	*Windsor, Conn.*	East, 31
Masseck, Clinton Joseph	*ab*	*W. Somerville*	*2 Ossipee Road*
Merchant, Ernest Howard	*e*	*Gloucester*	West, 31
Michael, William Whipple	*e*	*Kingston, N. Y.*	West, 25
Mitchell, Ernest Hervey Lewis	*e*	*Bath, Me.*	East, 34

Moore, Stanley Wallace	*e*	*Brooklyn, N. Y.*	Curtis, 11
Murray, Francis Joseph	*ab*	*Maynard*	Dean, 21
Newhall, Arthur Brock	*e*	*Lynn*	West, 13
Nickerson, Ralph Brown	*e*	*Everett*	East, 23
Odell, Raymond Hale	*ab*	*Salem*	*13 Briggs St.*
Page, Mabel Elizabeth	*ab*	*Somerville*	*4 Thurston St.*
Payrow, Harry Gordon	*ce*	*Lynn*	*17 Chase St.*
Perkins, Isabel Clara	*sc*	*Worcester*	Metcalf, 3
Piper, Fred Farwell	*e*	*Roxbury*	*7 Mt. Pleasant Pl.*
Powers, Cedric Arthur	*e*	*Allston*	*35 Linden St.*
Remele, Ethel Mason	*ab*	*W. Medford*	*56 Irving St.*
Richards, Amy Viola	*ab*	*Lynn*	Metcalf, 15
Riley, Zelotus Earl	*e*	*Attleboro*	West, 31
Ringer, Wilfred Harvey	*e*	*Charlestown*	
		23 Dearborn St., Medford Hillside	
Rogers, Mason Albright	*e*	*Albion, N. Y.*	Curtis, 6
Roper, Henry Joseph	*mp*	*N. Cambridge*	*29 Hubbard Ave.*
Rowe, Everett Whittemore	*sc*	*Gloucester*	East, 25
Russell, Ernest Wilmot	*e*	*Rockport*	
		78 Rogers Ave., W. Somerville	
Schoonmaker, Robert Selleck	*e*	*W. Somerville*	*22 Grove St.*
Seede, Charles Edward	*e*	*Lowell*	East, 21
Shaw, Charles Alford	*e*	*Fall River*	East, 2
Smith, Francis Warton Kaan	*e*	*Somerville*	*133 Central St.*
Stafford, Earl	*e*	*Rockport*	
		78 Rogers Ave., West Somerville	
Stevens, Damon Bryant	*e*	*W. Somerville*	*45 Kidder Ave.*
Stevens, Walter Leonard, Jr.	*e*	*W. Somerville*	*5 Kenwood St.*
Stevens, Walter Lockwood	*e*	*Medford*	East, 33
Sullivan, Patrick Joseph	*ce*	*Charlestown*	*47 Baldwin St.*
Sylvester, Allan Thorndyke	*e*	*N. Attleboro*	East, 7
Taylor, Spencer Harmon	*e*	*Somerville*	*9 Sycamore St.*
Thorpe, Winnifred Rosamond	*ab*	*Highlandville*	Metcalf, 7
Throckmorton, Oak Lee	*e*	*Wichita, Kan.*	
		99 Pinckney St., Boston	
Todd, Arthur Oswald	*ee*	*Trinidad, B. W. I.*	East, 6
Tupper, Margaret Christy	*ab*	*Lexington*	Metcalf, 1
Upham, Charles Melville	*e*	*Stoughton*	Curtis, 5
Ward, Arthur Henry	*e*	*Brooklyn, N. Y.*	Curtis, 11
Weeks, Hurburt Gordon	*e*	*Wellington*	*32 Fourth St.*
West, Geneva	*ab*	*New Dorchester*	Start, 7
White, Everett Sargent	*ab*	*Taunton*	East, 29
Wilbur, Ralph Sydney	*e*	*Hingham*	East, 1
Wilde, Sydney Laurence	*ab*	*W. Medford*	*Mystic Pumping Sta.*

Wilson, Rodney Melledge	*e*	*New Rochelle, N. Y.*	Dean, 8
Winn, Amy Josephine	*ab*	*Arlington*	77 *Summer St.*
Zeller, Joseph	*e*	*West Newton*	Curtis, 8

Armstrong, George West	*ab*	*Boston*	Dean, 10
Armstrong, Marjorie Wright	*ab*	*Somerville*	*112 Sycamore St.*
Bailey, Harold Leslie	*ab*	*Byfield*	East, 31
Kellogg, Charles A.	*ab*	*Watertown, N. Y.*	West, 5
Perkins, Edith Blanche	*ab*	*Medford*	*491 Main St.*
Renison, William James	*ab*	*S. Boston*	90 P St.
Ruth, Conant Wentworth	*ab*	*Houlton, Me.*	West, 25
Sherburne, Levitt Clough	*ab*	*Portland, Me.*	Paige, 27
Sheridan, Philip Edward Anthony	*ab*	*S. Boston*	*697 Sixth St.*
Vogt, Dayton George	*ab*	*Buffalo, N. Y.*	Paige, 25
Wilson, Harold David	*ab*	*Sherburne Falls*	East, 2

Special Students

Alexander, Lucy E. I. *Medical Preparatory*	*Campbellton, N. B.*		Start, 5
Boyden, Arthur Henry I. *Medical Preparatory*	*Worcester*	16 Washington Ave.,	Winthrop
Carritt, Ernest Henry I. *Theology*	*E. Aurora, N. Y.*		Paige, 34
Clarke, George Bryant I. *Medical Preparatory*	*Newport, Me.*		Dean, 10
Crabtree, Arthur Howard III. *Surveying*	*Somerville*	*112 Glenwood Road*	
Donovan, Walter James I. *Medical Preparatory*	*Providence, R. I.*		Dean, 11
Dunn, Winfield Tilley II. *Chemistry*	*Cambridge*	*207 Green St.*	
Fraser, Beatrice Maude II. *English*	*Somerville*	*16 Porter St.*	
Graves, Rae Delafield I. *Science*	*Northeast Harbor, Me.*		East, 8
Jewett, Henry Eric I. *English*	*Boston*	*Hemenway Chambers*	

Joski, Sadie I. *Economics*	*Roxbury*	*436 Dudley St.*
Ladd, Eleanore I. *Modern Languages*	*Medford*	*66 High St.*
Manotas, Francis dePaul I. *Philosophy*	*Barranquilla, Colombia* 119 Adams St., Medford Hillside	
Mulvey, Ernest Chaffey II. Economics	*Worcester*	Δ T House
Patch, Charles Edwin I. *Medical Preparatory*	*Arlington Heights*	
Prince, Percy Sylvester III. *English*	*Salem*	West, 12
Saunders, Julia Beatrice I. *Modern Languages*	*Lowell*	Metcalf, 15
Solano, Alejo I. *Philosophy*	*Sabanalarga, Colombia* 119 Adams St., Medford Hillside	
Wood, Robert L I. *Science*	*Northfield*	East, 26

Divinity School

Fourth Year

Emmons, Charles Henry	*Tufts College*	Paige, 5
Howes, George Henry	*Lowell*	Paige, 7
Lewis, George Hallam	*Meriden, Conn.*	Paige, 31
Miller, George Arthur	*N. Attleboro*	Paige, 30

Third Year

Angel, Frank James	*W. Somerville*	Paige, 36
Gay, George Augustus	*Meriden, Conn.*	Paige, 19
Parkhurst, Henry Adams	*Dunstable*	Paige, 13
Raspe, Otto Steinehofer	*W. Somerville*	Paige, 26
Willis, Sidney Joel	*West Concord, Vt.*	Paige, 24

Second Year

Gale, Howard Charles	*Haverhill*	Paige, 22
Weakley, James Richard	*Philadelphia, Pa.*	Paige, 4

Special Students

Carritt, Ernest Henry	*E. Aurora, N. Y.*	Paige, 34
Farmer, Thomas Jefferson	*Shirley*	Paige, 33

FIVE YEAR A.B.–B.D. COURSE

Fourth Year

Hersey, Harry Adams, A.B.	*Dorchester*	Paige, 12
Lobdell, Nelson Lyman, A.B. (St. L.)	*Medford*	Paige, 24
Moore, Fred Atkins	*Somerville*	*10 Grant St.*
Temple, Charles Hosea	*Hinsdale, N.H.*	Paige, 1

Third Year

Trout, Delmar Everett	*Springfield, O.*	Paige, 10

First Year

Hunt, Ralph Waldo Emerson	*Portland, Me.*	Paige, 15
Sherburne, Levitt Clough	*Portland, Me.*	Paige, 27
Vogt, Dayton George	*Buffalo, N. Y.*	Paige, 25

Bromfield-Pearson School

Averill, Alfred Augustus	*Edgartown*	Curtis, 5
Brown, Allen Brigden	*Medford*	*162 Main St.*
Bryer, Giles Sherman	*Wakefield*	East, 21
Burnham, George Augustus	*S. Essex*	Curtis, 9
Davis, Alfred Sherman	*Norwich, Conn.*	Curtis, 9
Dolbear, Samuel Hood	*Tufts College*	*134 Professors Row*
Esten, Stephen Warren	*Woonsocket, R. I.*	Dean, 12
Flagg, Guy Edward	*Woodstock, N. B.*	West, 3
Goddard, Roscoe Hudson	*Everett*	East, 23
Hemenway, Raymond Butler	*Newton Centre*	*58 Crescent Ave.*
Howes, Herbert Ellsworth	*Ashfield*	Curtis, 4
Lowell Arthur Currier	*Farmington, Me.*	East, 8
Morse, Mayo Elsworth	*Everett*	*37 Cleveland Ave.*
Puffer, Charles George	*Salem*	East, 28
Short, John Edward	*Shelburne Falls*	Curtis, 3
Small, Ernest Bliss	*Somerville*	*384 Somerville Ave.*
Starrett, John Phineas	*Nashua, N. H.*	West, 32
Studley, Joseph Harris	*N. Hanover*	Curtis, 10
Tinkham, Frank Bright	*Roxbury*	Dean, 4

Medical School

[P. O. Address, 416 Huntington Ave., Boston, Mass.]

Fourth Year

Bigelow, Alice Houghton, A.B. (Boston Univ.) *Jamaica Plain*
Bogan, Frederick Leon . . . . . *Charlestown*
Brassil, Timothy Francis . . . . . *Cambridge*
Brearton, Edward John . . . . . *S. Boston*
Brown, Edison William . . . . . *Dorchester*
Campbell, William Marie . . . . . *Dorchester*
Carvill, Lizzie Maud, A.B. . . . . *Somerville*
Coffin, Harriet Freeman . . . . . *E. Orange, N. J.*
Cowan, Marion, Ph.G. (Mass. Coll. Phar.) . . *Lynn*
Cox, Ann Caroline . . . . . *Boston*
Curry, Ernest Francis . . . . . *Melrose Highlands*
Curtis, Alton Kallock . . . . . *Boston*
Dutcher, William Austin . . . . . *Boston*
Dwyer, William Joseph . . . . . *Cambridge*
Eddy, Merritt Otis . . . . . *Townshend, Vt.*
Fiske, Rebecca Cutler . . . . . *Grafton*
Galbraith, Anna Veitch . . . . . *Victoria, Canada*
Gile, Frank Herbert, Jr. . . . . *Melrose*
Goddu, Louis Adolore Oliver, Ph.G. (Mass. Coll. Phar.) *Winchester*
Hammond, Harry Weymouth . . . . . *Boston*
Hardwick, Sydney Curtis . . . . . *Quincy*
Henry, Thomas Francis . . . . . *Salem*
Hinchliffe, Frederick . . . . . *Clayville, N. Y.*
Houghton, Richard Henry . . . . . *E. Boston*
Hussey, William Francis . . . . . *Boston*
Janes, Arthur Percy . . . . . *Boston*
Kelly, John Michael . . . . . *Dorchester*
Kingsbury, Walter Warren . . . . . *Walpole, N. H.*
Landers, George Bagnell . . . . . *Chelsea*
Long, Merritt Allen . . . . . *Manchester*
MacPhail, John Gunn . . . . . *Boston*
McCarthy, Eugene Justin . . . . . *Malden*
McCarthy, Francis Patrick . . . . . *Boston*
McLaughlin, John David . . . . . *E. Boston*
Medalia, Leon Sam Abrahams . . . . . *Boston*

Murphy, Anna Frances . . . . . *Nashua, N. H.*
Murphy, Frederick Vincent . . . . . *Brockton*
Nolan, James Patrick Augustus . . . . . *Boston*
Noyes, William Nelson . . . . . *Portsmouth, N. H.*
Ober, Frank Roberts . . . . . *Northeast Harbor, Me.*
Ordway, Mabel Dyer . . . . . *Jamaica Plain*
Rand, Anna Ethel . . . . . *Worcester*
Richardson, Horace Kimball . . . . . *Medford*
Roach, Alfred John . . . . . *Lowell*
Rochford, Grace Elizabeth . . . . . *Wellesley*
Rogers, Frank Norwood . . . . . *Dedham*
Rushford, Edward Allan . . . . . *Salem*
Scannell, James Joseph, A.B.(St. Bonaventure) *Roxbury*
Sherman, George Ernest . . . . . *Cambridge*
Simon, Arthur Leslie . . . . . *Waltham*
Smith, Myrtle . . . . . *Somerville*
Taylor, Maude Winnifred . . . . . *Hartford, Conn.*
Thompson, Harold Fenton . . . . . *Boston*
Tucker, Arthur Wallace . . . . . *Chelsea*
Tyson, Forrest Clark . . . . . *Tipton, Mich.*
Walker, William Dacre . . . . . *Peabody*
Warren, Lizzie Maude . . . . . *New Boston, N. H.*
Weeden, Allen Augustus . . . . . *Providence, R. I.*
Whelan, Charles, B.S. (Dartmouth) . . . . . *Weymouth*
Wood, Albert John . . . . . *Allston*
Young, Charles Henry . . . . . *Woburn*
Zaratt, Josefa . . . . . *San Juan, Porto Rico*

Third Year

Bagnall, Arthur Wallace . . . . . *Roslindale*
Baker, Myron Clarke . . . . . *Knoxville, Tenn.*
Barstow, Andrew Thaddeus . . . . . *E. Braintree*
Bates, Lewis Beals . . . . . *N. Weymouth*
Besse, Frank Adelbert, D.M.D. . . . . *Provincetown*
Blanchard, Stanley Wayne . . . . . *Montpelier, Vt.*
Bradbury, Walter Lyman . . . . . *Boston*
Breen, James Henry . . . . . *Hudson*
Brown, William James . . . . . *Boston*
Bruce, John Rufus . . . . . *N. Weare, N. H.*
Butler, John Dennison . . . . . *Boston*
Callahan, John Francis . . . . . *Pawtucket*
Carley, Frederick James . . . . . *Tewksbury*
Carr, Dennis Henry . . . . . *Dorchester*

Carr, Gladys Lydia . . . . . *Chelsea*
Chalmers, Hattie Elizabeth . . . . . *Hudson*
Coburn, Clarence Orrin . . . . . *Manchester, N. H.*
Cole, Ralph Waldo Emerson . . . . . *Franklin Falls, N. H.*
Cotter, Edward Joseph . . . . . *Roxbury*
Cummings, John Francis . . . . . *Brockton*
Cyr, Emile Edward . . . . . *Lawrence*
Davis, Ernest Leland . . . . . *Springfield*
Day, Cushman . . . . . *Boston*
Deacon, Thomas Irving . . . . . *Cambridge*
Doonan, Henry Edward . . . . . *Wellesley*
Eaton, Marland Hooper . . . . . *Beverly*
Felch, Lewis Perley . . . . . *Boston*
Fletcher, Arthur Stanton . . . . . *Waterville, Me.*
Fletcher, Christopher . . . . . *Chelsea*
Foster, George Sanford . . . . . *Manchester, N. H.*
Gage, Arthur Tenney . . . . . *Winchester*
Gibson, George William . . . . . *Chicopee*
Goldberg, Elias . . . . . *Boston*
Greenwood, Austin Ellsworth . . . . . *Lowell*
Ham, Helen Willard . . . . . *Middleboro*
Harrington, Clifton Ward . . . . . *Hathorne*
Harrison, Columbus William . . . . . *Boston*
Hennessey, William Warren . . . . . *Salem*
Hermann, Louis Alfred . . . . . *Boston*
Holmes, George Winslow . . . . . *Belfast, Me.*
Hughes, Archibald William . . . . . *Providence, R. I.*
Innes, Carrie Louise . . . . . *Boston*
Irving, Harry . . . . . *Providence, R. I.*
Keenan, George Francis . . . . . *Boston*
Kelly, Harvey Augustine . . . . . *Dorchester*
Kelly, Louis Alfred . . . . . *Charlottetown, P. E. I.*
King, Arthur Wight . . . . . *Hyde Park*
Lilley, John Franklin . . . . . *New Bedford*
Lynch, James Joseph . . . . . *S. Boston*
MacGhee, Charles Maxwell . . . . . *Boston*
McCready, Leo Thomas . . . . . *Providence, R. I.*
McMahon, Michael Francis Edward . . . . . *Worcester*
Mahoney, Charles Frederick . . . . . *Boston*
Mahoney, Walter Francis . . . . . *Hudson*
Makller, Moses . . . . . *Boston*
Marlin, Anna Sarah . . . . . *Boston*
Marr, Ben Butler . . . . . *Wilmington*
Mehan, Joseph Aloysius . . . . . *Lowell*

Monahan, John Terrence . . . . . *Hopkinton*
Morse, Irene May, A.M. (Illinois Wesleyan Univ.) *Laramie, Wyoming*
Murphy, John Michael . . . . . *Monson*
Nickerson, Mary Abbie . . . . . *Cohasset*
Nolan, Henry Stuart . . . . . *Somerville*
O'Brien, William Smith . . . . . *Marlboro*
Palmer, Louis James . . . . . *Boston*
Pitkin, Edith Winifred, B.A., (Wellesley) . . . *Albany, N. Y.*
Raymond, Charles Stanley . . . . . *Providence, R. I.*
Regan, William Henry . . . . . *Boston*
Roughan, Charles Michael . . . . . *Collinsville*
Rowe, Carl Allen . . . . . *Franklin, N. H.*
Segal, Jennie . . . . . *E. Boston*
Shaw, Matthew Albert Neil . . . . . *Boston*
Stacey, Winthrop Downing . . . . . *Charlestown*
Stammers, Joseph Collins . . . . . *Boston*
Stevens, William Russell . . . . . *Marshfield*
Sturnick, Frederick Michael . . . . . *Boston*
Sundin, Axel Kassemir Hildebrand . . . . . *Providence, R. I.*
Sweeney, Mary Agnes . . . . . *Nashua, N. H.*
Taylor, Roy Arnold . . . . . *Waltham*
Trottier, Arthur Ovilar . . . . . *Providence, R. I.*
Wagner, Emma Juliet . . . . . *Boston*
Welles, Franklin . . . . . *Boston*
Wood, Harold Abbott . . . . . *Brockton*
Young, Evangeline Wilson . . . . . *Brighton*

Second Year

Adams, Letitia Douglas . . . . . *Cambridge*
Albro, Marion Louise . . . . . *Providence, R. I.*
Aldrich, George Herman . . . . . *Marlboro, N. H.*
Alleyne, James Douglas . . . . . *Boston*
Andrew, Forest Christian . . . . . *Boston*
Bartlett, Fred Ai . . . . . *Melvins Mills, N. H.*
Berry, William Christopher . . . . . *Charlestown*
Besse, Florence Osmer . . . . . *Provincetown*
Blodgett, Merlin Freelan . . . . . *Milford, N. H.*
Bonelli, Raymond Peter . . . . . *E. Boston*
Bowker, Marion Esther . . . . . *Athol*
Brosnahan, Jeremiah Vincent . . . . . *S. Boston*
Brown, Louis Raymond, A.B. . . . . *Putnam, Conn.*
Cahir, Thomas Francis, Jr., ... *Cambridge*
Carroll, Arthur Everett . . . . . *Danvers*

Cleaves, Harrie Franklin . . . . . *Bar Harbor, Me.*
Cogan, Henry James . . . . . *Hyde Park*
Connor, George Aloysius . . . . . *Cambridge*
Crimmin, Philip Patrick . . . . . *Brockton*
Crowley, John Joseph . . . . . *Everett*
Dainty, George Wood . . . . . *Somerville*
David, Olier Joseph . . . . . *Lowell*
Dexter, Roger . . . . . *Brooklyn, N. S.*
Dobson, William Marshall . . . . . *Duxbury*
Dougherty, William Joseph . . . . . *Manchester*
Dunham, Adeline Frances . . . . . *Boston*
Dunn, Daisy Moore . . . . . *Roxbury*
Ellison, Daniel James . . . . . *Central Falls, R. I.*
Fallon, Joseph Francis . . . . . *Brookline*
Forsyth, James Perkins . . . . . *Concord, N. H.*
Foss, Ralph Emery . . . . . *Peabody*
Gaffney, Mary Evangeline . . . . . *Salem*
Gately, Mary Agatha Murray . . . . . *Boston*
Gates, Raymond Eugene . . . . . *E. Dedham*
George, Arial Wellington . . . . . *Boston*
Gettings, James Henry . . . . . *Fall River*
Gookin, Edward Richard . . . . . *Dorchester*
Hanlon, David Edward . . . . . *Hyde Park*
Hatch, Ernest Downing . . . . . *Boston*
Herne, Leonard Garland . . . . . *Rockport*
Higgins, Aaron Locke . . . . . *Rockland*
Hopkins, Alice Josephine Biggs . . . . . *Chelsea*
Hopkins, George Richard . . . . . *Medford*
Howland, George Lewis . . . . . *Boston*
Hunt, William Elliot . . . . . *Bridgewater*
Kearney, Joseph Patrick . . . . . *Lowell*
Keefe, Daniel Edward . . . . . *Athol*
Kelly, Alice Elizabeth . . . . . *Dorchester*
Kerrigan, Joseph Henry . . . . . *Woburn*
Kirkpatrick, Gilbert Stanley . . . . . *Wilmington*
Klein, Isaac . . . . . *Boston*
Knudson, Marie Mette . . . . . *Waltham*
Lanpher, Howard Arthur . . . . . *Roxbury*
Lima, Joseph Jacome Travassos . . . . . *Fall River*
Looney, Edward Michael . . . . . *Salem*
Lougee, John Leroy . . . . . *Boston*
Luce, Leroy Alson . . . . . *Gaysville, Vt.*
Lynch, Daniel Lawrence . . . . . *Jamaica Plain*
Lyons, Frederick Lawrence . . . . . *Charlestown*

MacDonald, Ronald John . . . . . *Cambridgeport*
MacNeil, Charles Seward Jadis . . . . . *Boston*
MacPherson, Lauchlin . . . . . *Upper South River, N. S.*
McCarthy, Lawrence John . . . . . *Rockville, Conn.*
McCarthy, Timothy William . . . . . *Rockville, Conn.*
McConville, Frederick Walter . . . . . *Boston*
McDonald, Louis Ronald . . . . . *Charlestown*
McIntire, Frederick Joseph . . . . . *Lynn*
McQuade, Lewis Steele . . . . . *Dorchester*
McTiernan, James Michael . . . . . *W. Quincy*
Manley, Francis Michael . . . . . *Brookline*
Mannix, Louis Edward . . . . . *Worcester*
Mara, Joseph Lawrence . . . . . *Boston*
Margot, Frederick Eugene . . . . . *Jamaica Plain*
Maroney, Joseph Patrick . . . . . *Franklin*
Marr, Myron Whitmore . . . . . *Dorchester*
Martin, John Foley . . . . . *Boston*
Merrifield, Chester Arthur . . . . . *Stoneham*
Moran, Edmund Francis . . . . . *Chelsea*
Morgan, Charles Russell . . . . . *Allston*
Myers, Edmund . . . . . *Roxbury*
Nettle, Paul . . . . . *Jamaica Plain*
O'Brien, Carl Robert . . . . . *Chelsea*
O'Connell, Lucy Jane . . . . . *Auburn, Me.*
Paine, Harland Lloyd . . . . . *Rockland*
Perrault, Joseph Napoleon . . . . . *Manchester, N. H.*
Pittinger, Lee Ross, D.D.S: (Phila. Dent. Coll.) *Boston*
Poole, Lawrence Earl . . . . . *Rockland*
Praino, Gaetano . . . . . *Boston*
Pratt, William Porter . . . . . *E. Weymouth*
Reeves, William Arthur . . . . . *Lynn*
Richardson, Carl Engene . . . . . *Marlboro, N. H.*
Ricker, Carroll Henry . . . . . *Boston*
Rock, Timothy Francis . . . . . *Nashua, N. H.*
Roseman, Benjamin Franklin . . . . . *Chelsea*
Ross, John Robert . . . . . *Roxbury*
Sawyer, Earle Dewey . . . . . *Bridgeton, Me.*
Shapiro, Charles . . . . . *Boston*
Shaw, John Joseph, Jr. . . . . *Providence, R. I.*
Simms, Herbert Eugene . . . . . *Boston*
Spaulding, John Doliver . . . . . *Mansfield*
Spline, Robert Emmett . . . . . *Dorchester*
Stone, William Livingstone . . . . . *Chelsea*
Stott, Ardenne Albert . . . . . *Reading*

Suitor, Henry Albert . . . . . *Barton, Vt.*
Sullivan, Edward Vincent . . . . . *Cambridge*
Sullivan, George Francis . . . . . *Worcester*
Taft, Annie Elzina . . . . . *Chestnut Hill*
Tighe, Eleanor Marie . . . . . *Keene, N. H.*
Troy, Alice Gertrude . . . . . *Worcester*
Tuttle, Howard Knowlton . . . . . *S. Acton*
Wells, Elwin Harrison . . . . . *Rumney, N. H.*
White, Frank Warren . . . . . *Arlington*
Wilson, Edmund Winifred . . . . . *Waltham*
Williams, David Lawrence . . . . . *Boston*
Young, Walter Harding . . . . . *E. Dedham*

First Year

Abbe, Elizabeth Morrison . . . . . *Enfield, Conn.*
Allton, Fred Wilbur . . . . . *Attleboro*
Addelson, Nathan . . . . . *Boston*
Arnold, Seth Fenelon . . . . . *Boston*
Atchison, Charles Michael . . . . . *New Bedford*
Bacon, Joseph Churchill . . . . . *Boston*
Baker, Norman Clyde . . . . . *Milford, N. H.*
Baxter, Alfred Ernest . . . . . *Somerville*
Blood, George Willard . . . . . *Hollis, N. H.*
Brennan, Edward Francis . . . . . *Natick*
Brown, Arthur Linwood . . . . . *Roslindale*
Burnham, John Fletcher . . . . . *Gloucester*
Burns, Richard Charles . . . . . *Lawrence*
Burrier, Walter . . . . . *Boston*
Butler, Samuel Joseph . . . . . *E. Boston*
Cahill, Thomas Joseph . . . . . *Cambridge*
Callender, George Russell . . . . . *Northfield*
Campbell, Fred Glover . . . . . *Rockland, Me.*
Carpenter, Elbridge Arthur . . . . . *Lyndonville, Vt.*
Carvell, Hanford . . . . . *Medford*
Coburn, Harry Ray . . . . . *Canaan, N. H.*
Conley, John Thomas . . . . . *Brockton*
Connolly, William Charles . . . . . *Jamaica Plain*
Conway, William Stanislaus . . . . . *Uxbridge*
Corcoran, John Gilbert . . . . . *Essex*
Costa, Domizio Augustine . . . . . *E. Boston*
Crosby, Walter Hiram . . . . . *Beverly*
Crowley, Robert Emmett, Jr. . . . . *Lowell*
Crummett, Florence Estelle . . . . . *Exeter, N. H.*

Derby, Charles Arthur . . . . . *Farnham, P. Q.*
Dodge, Percy Loraine . . . . . *Needham*
Donnell, Herbert Anthony . . . . . *Forest Hills*
Doran, John Michael . . . . . *Boston*
Elliott, Edward Scott . . . . . *Boston*
Fay, Joseph Henry . . . . . *Fall River*
Fitzpatrick, James Joseph . . . . . *Salem*
Flagg, Harry Howard . . . . . *Charlestown*
Gardella, Bartholomew A. . . . . *Boston*
Glunts, David . . . . . *Boston*
Grainger, Joseph Francis . . . . . *Cambridge*
Grandmaison, Albert Joseph . . . . . *Nashua, N. H.*
Griffin, William Wadsworth . . . . . *Savannah, Ga.*
Hadley, Amos William . . . . . *Worcester*
Hamilton, Harry Levi . . . . . *Old Town, Me.*
Hamm, Leslie . . . . . *Boston*
Hill, Harry Joseph . . . . . *Boston*
Honeij, James Albert . . . . . *W. Somerville*
Horgan, John Joseph . . . . . *Worcester*
Hoyt, Frank Whitford . . . . . *Tewksbury*
Janes, Benjamin Franklin, Jr. . . . . *Cambridge*
Johnson, John Birger Albert . . . . . *Lowell*
Kelley, Edward Paul . . . . . *Woburn*
Larrabee, Charles William . . . . . *Melrose*
Leary, Matthew Mark . . . . . *E. Boston*
Leland, Forrest Leroy . . . . . *Calais, Me.*
Light, Everett Elmer . . . . . *Waterville, Me.*
Liverpool, Coval Henry . . . . . *Boston*
Lupien, Henry John . . . . . *Cochituate*
MacQueen, James Allen . . . . . *Roxbury*
McCarthy, Charles Andrew . . . . . *Boston*
McCarthy, Charles Francis . . . . . *Chelsea*
McCarthy, Charles Patrick . . . . . *Brockton*
McCartin, John Edward . . . . . *Providence, R. I.*
McNamara, James Joseph . . . . . *Manchester*
McNamara, George Vincent . . . . . *Boston*
Mahar, Harold Robert Collins . . . . . *Smithtown, N. H.*
Mains, Herbert Llewellyn . . . . . *Danvers*
Manary, James Wescott . . . . . *So. Boston*
Manotas, Arturo Fabio . . . . . *Baranquilla, Colombia, S.A.*
Manotas, Carlos Manuel . . . . . *Colombia, S. A.*
Marion, Otis Daniel . . . . . *Jamaica Plain*
Mayo, Thomas Franklin . . . . . *Medford*

Meehan, John Francis . . . . . *Lowell*
Merrill, Adelbert Samuel . . . . . *Belfast, Me.*
Metcalf, Julia Tracy . . . . . *Brookline*
Miller, George Andrew . . . . . *Cambridge*
Miller, George Fremont . . . . . *Boston*
Mintz, Samuel Charles . . . . . *E. Boston*
Miskella, James Francis . . . . . *Lowell*
Mitchell, Howard Dykeman . . . . . *Chelsea*
Mulvanity, Sadie Angela . . . . . *Nashua, N. H.*
Murray, Benjamin Frank . . . . . *Boston*
Murphy, Daniel J., Jr. . . . . *Lawrence*
Mysel, Hymen . . . . . *Boston*
Nutter, Roy Bartlett . . . . . *Boston*
O'Dea, Nellie Geraldine . . . . . *Wilkes Barre, Pa.*
Otis, George Herbert . . . . . *Scituate*
O'Toole, John Laurence . . . . . *Brighton*
Perkins, Franklin Haskins . . . . . *Boston*
Pettey, John Anderson . . . . . *Fall River*
Power, Robert William . . . . . *Boston*
Prenn, Joseph . . . . . *Boston*
Pulsifer, Walter Hall . . . . . *Abington*
Putnam, Edweena Restieaux . . . . . *Chelsea*
Ralph, Wilbur Booth . . . . . *Utica, N. Y.*
Ramsey, John Henry . . . . . *Charlestown*
Rand, Charles Augustus Beaty . . . . . *Weston*
Randall, Harriet Noyes . . . . . *Wellesley*
Reese, John Arnold . . . . . *Attleboro*
Reinherz, George . . . . . *Boston*
Reynolds, Frank Leo Sinclair . . . . . *Vernon Centre, N. Y.*
Rice, Herbert Augustus . . . . . *Charlestown*
Roche, Thomas Neil . . . . . *Boston*
Rowe, Ellen Mae . . . . . *Watertown*
Rubin, Solomon Hyman . . . . . *Boston*
Sanborn, Mary Esther . . . . . *Brookline*
Scanlan, Maurice Thomas . . . . . *Dorchester*
Schneider, Harry Albert . . . . . *Palmer*
Shay, George William . . . . . *Roxbury*
Sheehan, Katherine Cecelia . . . . . *Salem*
Simonson, Louis, Ph.G. (Mass. Coll. Phar.) . *Middletown, Conn.*
Smith, Louis Bernard . . . . . *Waverly*
Steeves, Frank Leslie . . . . . *Boston*
Steward, Carleton White . . . . . *Skowhegan, Me.*
St. Jacques, Joseph Robert, Jr. . . . . *Whitinsville*

Streker, William Sylvester . . . . . *Providence, R. I.*
Tilton, Earle Edward . . . . . *Malden*
Toppan, Albert Brookings . . . . . *Newburyport*
Vinal, Leslie Thorning, B.L. (Smith) . . . . *Somerville*
Wallace, Harold Love . . . . . *Brookline*
Walsh, James Frank . . . . . *S. Framingham*
Walsh, James Joseph . . . . . *Woburn*
Walsh, Thomas Francis . . . . . *Jamaica Plain*
Warner, Edward Martin . . . . . *Boston*
Wheeler, William Dexter . . . . . *Boston*
White, Miriam Frances . . . . . *Boston*
Woodman, Ella Olive . . . . . *Portland, Me.*
Woodward, George Napoleon . . . . . *Jacksonville, Ala.*
Wright, Francis Joseph . . . . . *Boston*

Special Students

Bennett, William Henry . . . . . *Roxbury*
Bickford, Wallace Mellen . . . . . *St. Paul, Minn.*
Condict, Alice Byram, M.D. (Chicago Hom. Med. Coll.) *Morristown, N. J.*
Derby, Frederick William . . . . . *Arlington*
Derrick, Joseph Stephen . . . . . *Charlestown*
Gram, Theodore Christian . . . . . *Wollaston*
Harrington, Robert Brine . . . . . *Somerville*
Higgins, George Vincent . . . . . *North Abington*
Holt, Lucinda Mary-Belle, B.L. (Smith), M.D. *Portland, Me.*
Kendricken, Joseph Thomas . . . . . *Boston*
Kennison, Frederick Marshman . . . . . *Boston*
Mahoney, Francis Aloysius . . . . . *Chelsea*
Murphy, Frederick Paul . . . . . *Lowell*
Peters, Solon Wilder . . . . . *Sterling*
Peterson, Clark Kimball . . . . . *E. Boston*
Stockbridge, Alberto Horatio . . . . . *Cochituate*
Tinkham, Oliver Goldsmith . . . . . *Weymouth*
Tyron, Geneva . . . . . *Cambridge*
Walsh, Joseph . . . . . *Augusta, Me.*

Dental School

[P. O. Address, 416 Huntington Ave., Boston, Mass.]

Senior Class

Ash, Henry . . . . . *N. Weymouth*
Brenan, Henry Edward . . . . . *Boston*
Carlson, Bertel Gustaf . . . . . *Dorchester*
Caswell, Fred. Calvin . . . . . *Brockton*
Cole, Charles Cummings . . . . . *Boston*
Dickinson, George Granville Parker . . . . . *Harvard*
Dowd, Harry Irving . . . . . *Torrington, Conn.*
Dunleavy, John Eugene . . . . . *Uxbridge*
Finnegan, George Francis . . . . . *Waltham*
Gately, John Francis . . . . . *N. Grafton*
Horn, Robert . . . . . *Southville*
Marr, Thomas Edward . . . . . *Waltham*
Mullin, Charles Samuel . . . . . *Cambridge*
Noonan, Kaen Aloysius . . . . . *Roxbury*
Potter, George Edwin . . . . . *Greenwood*
Roy, Emile Alfred . . . . . *Mittineague*
Tuttle, Fred Wilbur . . . . . *Boston*

Junior Class

Atwood, Ira Osmyn . . . . . *N. Attleboro*
Barry, Henry Adams . . . . . *Salem*
Blagdon, Joseph Michael . . . . . *Charlestown*
Bonnell, Fenwick Clifton . . . . . *St. John, N. B.*
Boyd, Walter Lawrence . . . . . *Cambridge*
Bruce, Barnett . . . . . *Portland, Me.*
Chapman, Frank H. . . . . *Meredith, N. H.*
Cheever, Annie Frances, Ph.B. (Brown) . . . *N. Attleboro*
Connell, Grover Joseph . . . . . *Dorchester*
Cook, William Henry . . . . . *Taunton*
Costello, Richard Joseph . . . . . *Cambridge*
Crawford, Arthur Archibald . . . . . *Cambridge*
Dary, Lewis Brown . . . . . *Pawtucket, R. I.*
Dickey, Gilmore Colby . . . . . *Boston*
Eaton, William Henry . . . . . *Somerville*
Fanning, Arthur Oscar . . . . . *Salem*

Gallagher, Charles Aloysius . . . . . *Roxbury*
Grant, Ethel Edna . . . . . *Boston*
Harding, Arthur Clement . . . . . *Cambridge*
Hickey, Daniel Francis . . . . . *Boston*
Hill, Hugh Thomas . . . . . *Boston*
Ingalls, Byron Grayson . . . . . *Whitinsville*
Jones, Warren Reese . . . . . *Stoneham*
Kensell, Frederic Albion . . . . . *Whitefield, Me.*
Kerrigan, Joseph Patrick . . . . . *Cambridge*
King, Frank Collin . . . . . *Chipman, N. B.*
Lougee, Charles Samuel . . . . . *E. Parsonsfield, Me.*
Lowe, Arthur Stanley . . . . . *Springfield*
Lyons, James David . . . . . *Hamilton, N. Y.*
MacCaleb, Ernest Wonson . . . . . *Gloucester*
McDonell, Fred William . . . . . *Montreal, P. Q.*
McGee, Timothy Lawrence . . . . . *Worcester*
McGrath, George Henry . . . . . *Weymouth*
McIntosh, Arthur Herbert . . . . . *Melrose*
McTernen, Malcom Bodwell . . . . . *Andover*
Mahan, Joseph Ambrose . . . . . *Natick*
Massicotte, Joseph, Jr. . . . . *Webster*
Melanson, Thomas . . . . . *Corberrie, N. S.*
Mignault, William Theodore . . . . . *Boston*
Murphy, George Arthur . . . . . *St. John, N.B.*
Murphy, James Patrick . . . . . *Natick*
Nash, George Page . . . . . *Lewiston, Me.*
Neary, John Thomas . . . . . *Southboro*
Oliver, Alton Elihu . . . . . *S. Braintree*
Pendexter, Thomas Merritt . . . . . *Amesbury*
Pierce, William T. . . . . *Gardiner, Me.*
Pofcher, Simon . . . . . *Everett*
Reynolds, Carl Edgar . . . . . *Weymouth Heights*
Ricker, Albert Winslow . . . . . *Cochituate*
Risegari, Hector George . . . . . *Boston*
Robbins, Walter Bartlett . . . . . *S. Braintree*
Ross, Philip Knight . . . . . *Gorham, N. H.*
Talty, Joseph Edward . . . . . *Woburn*
Tingley, George Wright . . . . . *Moncton, N. B*
Underwood, Edith Marion . . . . . *Allston*
Watson, Scott Emery . . . . . *Stoneham*
Wheeler, Ralph Deming . . . . . *Pittsfield*
Whipple, Lewis Allen . . . . . *Essex*
White, Paul Gardiner . . . . . *Boston*

White, Henry Anson . . . . . *Dorchester*
Whitney, Carl Harvey . . . . . *Somerville*
Wright, William Frank . . . . . *Roxbury*

First Year

Atamian, Armenag Garo . . . . . *E. Cambridge*
Bacon, Charles Harland . . . . . *Plainville*
Banks, Henry Lewis . . . . . *Dorchester*
Bernard, Rose . . . . . *S. Boston*
Bertrand, Alfred Charles . . . . . *Dracut*
Brackett, Henry Francis, Jr. . . . . *Dorchester*
Brassill, Francis Joseph . . . . . *Rockland*
Brown, Dana Walker, Jr. . . . . *Somerville*
Brown, Everett Mitchell . . . . . *Portland, Me.*
Channing, Raymond Elliott . . . . . *Albany, N. Y.*
Chappell, Perry Theophilus . . . . . *Charlottetown, P. E. I.*
Clifford, Gerald Packard . . . . . *S. Paris, Me.*
Church, Harry Manthano . . . . . *Gardiner, Me.*
Conway, Thomas Patrick Joseph . . . . . *Uxbridge*
Cutler, Homer Joseph . . . . . *Somerville*
Davis, Herbert Elmer . . . . . *Linwood*
Davis, Willard Sawtelle . . . . . *Hyde Park*
Delano, John Holmes . . . . . *Kingston*
Derby, Frank Amos . . . . . *Keene*
Dinsmore, Austin Copeland . . . . . *Boston*
Dobbin, Arthur Henry . . . . . *Wolcott*
Eastman, Byron Levi . . . . . *S. Weare, N. H.*
Feffer, William . . . . . *Boston*
Fitzgerald, Francis Joseph . . . . . *Somerville*
Gallagher, Patrick Joseph . . . . . *Moncton, N. B.*
Gibbs, Roy Johnson . . . . . *Bridgewater*
Gilroy, Edward Francis . . . . . *Attleboro*
Gilstein, Harry Morris . . . . . *E. Boston*
Goudey, Charles Bruce . . . . . *Everett*
Gower, Stanley Merrill . . . . . *Portland, Me.*
Greene, Simon Karl . . . . . *Cambridge*
Halnan, Chester Augustine . . . . . *Weymouth*
Hanley, Ambrose Leo . . . . . *Providence, R. I.*
Harson, Raymond Joseph . . . . . *Providence, R. I.*
Haven, Charles Philip . . . . . *Providence, R. I.*
Holmes, Burton Alonzo . . . . . *Walpole, N. H.*
Hopkins, Charles Byron . . . . . *Central Falls, R. I.*
Hutchinson, Lester Hurd . . . . . *Somerville*

Hutchinson, Richard Donomore . . . . . *Lynn*
Isenberg, Julius . . . . . *E. Boston*
Kaizer, George Ambrose . . . . . *Boston*
Kelley, James Henry . . . . . *Brockton*
LaFlamme, Joseph Leopold . . . . . *Cambridge*
Lamkin, Everett Walker . . . . . *Lynn*
LaRivière, Ulysse . . . . . *Manville, R. I.*
Lipner, Morris Joseph . . . . . *Boston*
Lowell, Ralph P. . . . . *Waltham*
Lynch, Paul . . . . . *Waltham*
Lynn, Chester Homer . . . . . *Meriden, Conn.*
Mackey, Ouida Fairchild . . . . . *Boston*
MacKillop, Kenneth . . . . . *Boston*
McAlevey, George Walter . . . . . *Lynn*
McCarthy, John William . . . . . *Holyoke*
McCooey, Joseph Patrick . . . . . *Blackstone*
McDermott, Fred John . . . . . *Worcester*
McKenna, Charles John . . . . . *Boston*
Mallette, Francis Ernest . . . . . *Chelsea*
Mansir, Joseph Maurice . . . . . *Richmond, Me.*
Martin, Arthur Simeon . . . . . *Manchester*
Messer, John Hoag, ... *Gt. Barrington*
Metters, Harold Gifford . . . . . *N. Attleboro*
Miett, Elmer Peter . . . . . *Haverhill*
Montague, Henry Francis . . . . . *Boston*
Montgomery, William Edward . . . . . *Natick*
Morgan, Daniel Joseph . . . . . *S. Boston*
Mulloy, Joseph James . . . . . *Winthrop*
Murphy, James John . . . . . *Lewiston, Me.*
Murphy, John Lester . . . . . *Boston*
Myles, Frederick Kennah . . . . . *Cambridge*
Nee, Joseph Festus . . . . . *Boston*
Neely, Dorustus Wesley . . . . . *Somerville*
Nordgren, Percy Nils . . . . . *Boston*
Nutting, Ada Bartlett . . . . . *Quincy*
O'Connor, James Henry . . . . . *Winchester*
Packard, Warren Henry . . . . . *Brockton*
Palmer, Leslie Edwin . . . . . *Boston*
Potter, Roger Williams . . . . . *Roxbury*
Quinn, Benjamin Hopkins . . . . . *Whitinsville*
Rice, James William . . . . . *Malden*
Rice, Richard Leon . . . . . *Portland, Me.*
Richardson, Heze Sumner . . . . . *Mt. Desert, Me.*

Robins, Thomas Ernest Earl . . . . . *Charlottetown, P. E. I.*
Rollins, Charles William . . . . . *E. Boston*
Siskind, Isador . . . . . *Boston*
Smith, Kleber Wilbur . . . . . *Hartland, Me.*
Stevens, Sidney Wendell . . . . . *Somerville*
Stuart, Clifford Allan . . . . . *Cambridge*
Sullivan, Abigail Cecelia . . . . . *Cambridge*
Taylor, John Franklin . . . . . *Plymouth*
Taylor, Lelia May . . . . . *Salem*
Tetlow, John Earle . . . . . *Shawomet, R. I.*
Thomson, Harry Scott . . . . . *Moncton, N. B.*
Tishler, Mark . . . . . *Boston*
Tobin, Chester Edgar . . . . . *Malden*
Toombs, Benjamin Lawson . . . . . *Moncton, N. B.*
Tubbs, Herbert Stradivarius . . . . . *Cambridge*
Tuell, Charles Hale . . . . . *Milltown, Me.*
Whitten, Charles Clifton . . . . . *Waltham*
Worthen, Annie Skinner . . . . . *Amesbury*

Special Students

Buslin, John Lawrence . . . . . *Woburn*
Brosnahan, James Leo . . . . . *Boston*
Gehrung, Arthur Francis . . . . . *N. Attleboro*
Hart, Frederick James, D.M.D. . . . . *Lowell*
Harvie, Alice Gertrude, D.D.S., (Phila. Dent. School) *Providence, R. I.*
Hodgdon, Albert Emerson Paige . . . . . *E. Foxboro*
Lunt, Wilbur True . . . . . *Rochester, N. H.*
McGourty, Frederick William . . . . . *Worcester*
McKenna, Charles John . . . . . *Somerville*
Medeiros, Arthur D. . . . . *Somerville*
Moore, Horace Dwight . . . . . *Lynn*
Moran, Philip Frederick, D.M.D., ... *Somerville*
Morse, Ralph Prescott . . . . . *New York, N. Y.*
Osborne, Shelley Barnes . . . . . *Hopedale*
Stuart, Charles Sprague . . . . . *S. Paris, Me.*
Sterling, Peter, D.D.S., (Phila. Coll. Dent. Surg.) *Fall River*
Taylor, Ernest Bossuet . . . . . *Waltham*
Young, John Maurice . . . . . *Rockland*

Four Years Course

Kickham, Charles Joseph . . . . . *Brookline*
Rochefort, Myron Stockbridge . . . . . *Abington*
Ross, Isador Posner . . . . . *Boston*
Torosian, Paul David . . . . . *Norwich, Conn.*

SUMMER SCHOOL

Biology

Arturo Manotas . . . . . Baranquilla, Coolmbia
Student, Tufts Medical School

Carlos M. Manotas . . . . . Baranquilla, Colombia
Student, Tufts College

Guy E. Marion . . . . . Woburn

Curtis W. Nash . . . . . Winchester
Student, Tufts College

Katherine Reid . . . . . Portland, Maine

E. E. Smith . . . . . Eden, Maine
Principal of High School

F. F. Smith . . . . . Hyannis
Instructor in Science in Normal School

Grace O. Titus . . . . . New York, N. Y.
Teacher in Normal School, New York City

Medical Chemistry

F. A. Bartlett
W. C. Berry
R. C. Burns
H. F. Cleaves
F. W. Derby
L. R. McDonald
M. F. E. McMahon
F. E. Maygot
L. R. Pittinger, D.M.D.

Histology

H. H. Barnard
T. I. Deacon
B. A. Gardella
G. F. Keenan
E. H. Wells

Summary

CORPS OF INSTRUCTION

Emeritus	2	
President and Professors	50	
Assistant Professors	16	
Demonstrators	3	
Instructors	60	
Lecturers	6	
Assistants	27	
Laboratory Assistants in the Medical and Dental Schools	27	
Total engaged in work of instruction	—	191
Other Officers, not previously counted		11

STUDENTS

COLLEGE OF LETTERS:		
Graduate	5	
Senior	61	
Junior	71	
Sophomore	80	
Freshman	118	
Special	19	354
DIVINITY SCHOOL:		
Fourth Year	4	
Third Year	5	
Second Year	2	
Special	2	
FIVE-YEAR A.B.—B.D. COURSE:		
Fourth Year	4	
Third Year	1	
First Year	3	21
MEDICAL SCHOOL:		
Fourth Year	62	
Third Year	84	
Second Year	115	
First Year	129	
Special	19	409
DENTAL SCHOOL:		
Senior	17	
Junior	62	
Freshman	99	
Special	18	
Four Years Course	4	200
SUMMER SCHOOL		22
BROMFIELD-PEARSON SCHOOL		19
Total registration		1025
Names appearing twice		21
Total number of students		1004

The following persons carried on work at the Harpswell Laboratory during the Summer of 1904:—

George A. Bates, D.D.S., M.S.
Professor of Histology, Tufts Medical School

Frank S. Collins
Malden, Mass.

Emily Ray Gregory, Ph.D.
Professor of Biology, Wells College, Aurora, N. Y.

J. S. Kingsley, Sc.D.
Professor of Biology, Tufts College

F. D. Lambert, Ph.D.
Assistant Professor of Biology

Guy E. Marion, A.M.
Fellow in Biology, Tufts College

Arturo Manotas
Student, Tufts College

Carlos Manotas
Student, Tufts College

Curtis W. Nash
Student, Tufts College

Herbert V. Neal, Ph.D.
Professor of Biology, Knox College, Galesburg, Ill.

Katherine Reid
Portland, Maine

Ernest E. Smith
Principal of High School, Eden, Maine

F. F. Smith
Instructor in Science, Normal School, Hyannis, Mass.

Grace C. Titus
Teacher in Model School, New York City

Millett T. Thompson, Ph.D.
Instructor in Biology, Clark University, Worcester, Mass.

C. B. Wilson
Professor of Natural Science, Normal School, Westfield, Mass.

Naohide Yatsu
Fellow in Zoology, Columbia University, N. Y.

B 18.73
T9

TUFTS COLLEGE CATALOGUE

1905-1906

Published monthly, from December to June inclusive, at Tufts College, Mass., by the Trustees of Tufts College. Copies may be had by addressing the Secretary, HARRY G. CHASE, Tufts College, Mass.

☞ The post-office address of the College of Letters, the Divinity School, the Department of Engineering, and the Bromfield-Pearson School, is TUFTS COLLEGE, MASS.

The address of the Medical and Dental Schools is 416-430 HUNTINGTON AVENUE, BOSTON, MASS.

TUFTS COLLEGE CATALOGUE

Tufts College Publications
New Series, Vol. VI, No. 1

CATALOGUE

OF

TUFTS COLLEGE

1905–1906

Published in December, 1905, by the Trustees of Tufts College

Entered at the Post-Office at Tufts College, Mass.,
as Second Class Matter

THE TUFTS COLLEGE PRESS

Calendar — 1906

JANUARY

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

FEBRUARY

				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

MARCH

				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

APRIL

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

MAY

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

JUNE

					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

JULY

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

AUGUST

			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

SEPTEMBER

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

OCTOBER

	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

NOVEMBER

				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

DECEMBER

						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Tufts College is a railway station four miles from Boston on the Southern Division of the Boston and Maine Railroad. It is also accessible from Boston by electric cars. The post-office address is — TUFTS COLLEGE, MASS.

Contents

PAGE

PLAN OF THE COLLEGE GROUNDS (next to front cover)
CALENDAR 5
HISTORICAL SKETCH 11
The College Charter 17
Constitution of the Board of Overseers 18

ADMINISTRATION

TRUSTEES 23
OVERSEERS 24
BOARDS OF VISITORS 25
OFFICERS OF INSTRUCTION AND GOVERNMENT 26
Proctors 38
Russell Lecturer 38
Editors of Tufts College Studies . 38
Curators of Buildings 38
FACULTY OF ARTS AND SCIENCES
Standing Committees 39

COLLEGE OF LETTERS

FACULTY OF THE COLLEGE OF LETTERS 43
Committee on Promotions 44
Committee on Curriculum 44
Requirements for Admission 45
The Primary Group 46
The Secondary Group 51
General Information relating to Admission 57
REQUIREMENTS FOR DEGREES . . . 57
For A.B. 59
For B.S. 61
DEPARTMENTS OF INSTRUCTION (Courses in Liberal Arts) 63
Major Departments 63
English 64
Oratory 66
German 67
French 69
Italian 70
Latin 70
Greek 72
Classical Archaeology 74
Hebrew 75
Philosophy 75
Pedagogics 78

PAGE

History and Public Law 78
Political Science 82
Mathematics 84
Physics 85
Chemistry 87
Biology 90
Geology 92
Mineralogy 93
Drawing and Shopwork 93
Civil and Mechanical Engineering . 95
Electrical Engineering 97
Music 97
The Fine Arts 99
Physical Training 100
TABULAR VIEW OF PROGRAM HOURS 102
COURSES IN SCIENCE (Leading to Degree of B.S.) 107
General Science 107
Medical Preparatory 109
Chemistry 109

DEPARTMENT OF ENGINEERING

Faculty of the Department of Engineering 113
Committee on Promotions 114
General Information 115
Expenses 116
A.B. and B.S. in Five Years 117
Engineering Courses 119
Civil Engineering 120
Mechanical Engineering 122
Electrical Engineering 124
Chemical Engineering 126
Mathematics 128
Drawing 130
Shopwork 132
Chemistry 134
Physics and Electricity 136
Engineering—Civil and Mechanical 140
English 146
Modern Languages 148
Political Economy 148
Physical Training 148
TABULAR PROGRAM IN ENGINEERING 150
Faculty of the Graduate Department 155
Standing Committees 158

PAGE

GRADUATE DEPARTMENT

Instruction 159
Degrees 159
Departments open for A.M. 161
Departments open for Ph.D. . . . 166
Fellowships 167
Scholarships 168
Tuition 168

DIVINITY SCHOOL

FACULTY OF THE DIVINITY SCHOOL 171
Non-Resident Lecturers 172
Committee on Promotions 172
CONDITIONS OF ADMISSION 173
Requirements for B.D. 173
DEPARTMENTS OF INSTRUCTION . . 175
SUMMARY 184
GENERAL INFORMATION 186
EXPENSES AND AIDS 187

GENERAL INFORMATION 191
Religious Observances 191
Tufts College Studies 191
Registration 192
Program 193
Promotion 194
Major Subjects 195
Athletics 195
Admission from other Colleges . . . 195
Special Students 195
Terms and Vacations 196
Absences 196
Expenses 197
Office Hours 199
Scholarships and Other Aids 199
Prizes 204
Committee of Information 205
Honors and Degrees 205
BUILDINGS AND EQUIPMENT 209

MEDICAL SCHOOL

FACULTY OF THE MEDICAL SCHOOL 222
Other Instructors 223
Laboratory Assistants 226
Standing Committees 227
STUDENT GOVERNMENT BOARD . . . 228
GENERAL STATEMENT 229
DEPARTMENTS OF INSTRUCTION . . 229
PREPARATION 246
REQUIREMENTS FOR ADMISSION . . 247
ADVANCED STANDING 248
PROMOTION 248
REQUIREMENTS FOR GRADUATION . 249
Honors 249
Standing and Certificates 249
Outline of Course 250

PAGE

Examinations 251
Text-books 252
Fees and Expenses 253
General Information 254
Summer Courses 255
Registration 256

DENTAL SCHOOL

FACULTY OF THE DENTAL SCHOOL . 259
Other Instructors 260
Laboratory Assistants 263
Other Officers 263
Standing Committees 264
GENERAL STATEMENT 265
COURSE OF INSTRUCTION 267
REQUIREMENTS FOR ADMISSION AND GRADUATION 273
Examinations 275
Outline of Course 276
Text-books 276
Expenses 277
GENERAL INFORMATION 279
SUMMER COURSES 280

BROMFIELD-PEARSON SCHOOL

BOARD OF INSTRUCTION 282
GENERAL STATEMENT 283
Admission 283
Expenses 284

THE HARPSWELL LABORATORY 285

DEGREES AND HONORS

FORTY-NINTH ANNUAL COMMENCEMENT (Degrees Conferred) . . . 289
Commemoration Day 289
Commencement Day 290
Theses 292
Honors and Honorable Mention . . 293
Commencement Parts 293
AWARDS OF PRIZES 294

REGISTER OF STUDENTS

GRADUATE DEPARTMENT 296
COURSES IN ARTS AND SCIENCES . 297
Special Students 305
Supplementary List 306
DIVINITY SCHOOL 307
BROMFIELD-PEARSON SCHOOL 308
MEDICAL SCHOOL 309
DENTAL SCHOOL 318
SUMMER SCHOOL 325
SUMMARY 326
REGISTER OF THE HARPSWELL LABORATORY 327

INDEX 329

Calendar

1905

SEPT.	21.	College year begins (all departments except the Medical and Dental Schools), Thursday morning
SEPT.	22.	All classes meet for fifteen-minute periods, Friday
SEPT.	23.	Regular College exercises begin, Saturday
SEPT.	23.	Entrance examinations at the Medical and Dental Schools, Saturday
SEPT.	27.	Lectures begin in the Medical and Dental Schools, Wednesday
OCT.	1.	Russell Lecture, Sunday
NOV.	22.	Announcement of Academic Honors, 12 M., Wednesday
NOV.	29.	Thanksgiving recess begins, Wednesday, at 1 P.M.
DEC.	3.	Thanksgiving recess ends, Sunday evening
DEC.	20.	Christmas recess begins in the College of Letters and the Engineering Department, Wednesday, 12.45 P.M.
DEC.	25.	Christmas recess begins, Medical and Dental Schools

1906

JAN.	1.	Christmas recess ends, Monday, 2 P.M. In the Medical and Dental Schools, exercises are resumed, at 9 A.M.
JAN.	29.	Mid-year examinations begin, in the College of Letters and in the Department of Engineering, Monday, 9 A.M.
FEB.	10.	End of first half-year, Saturday
FEB.	12.	Second half-year begins, Monday. Registration of all students in the College of Letters. Programs for the second half-year must be filed and registration cards completed before noon
FEB.	13.	Regular exercises begin in the College of Letters, Tuesday, 8.30 A.M.
FEB.	22.	Washington's Birthday, Thursday. College exercises suspended
APRIL	2–7.	Spring recess in the Medical and Dental Schools
APRIL	12.	Spring recess in the College of Letters begins, Thursday, 6 P.M.
APRIL	16.	Spring recess ends, Monday evening
APRIL	19.	Patriots' Day, Thursday. College exercises suspended
MAY	11.	Goddard Prize Reading in the College of Letters, Friday, 8 P.M.
MAY	22.	Greenwood Prize Reading in the Divinity School, Tuesday, 3 P.M.
MAY	30.	Memorial Day, Wedneday. College exercises suspended
JUNE	5.	Final examinations begin in the College of Letters, and in the Department of Engineering, Tuesday
JUNE	11.	Entrance Examinations at the Medical and Dental Schools, Monday, 10 A.M.
JUNE	15.	Class Day, Friday

JUNE 17. Baccalaureate Sermon, Sunday, 4.30 P.M.

JUNE 20. Fiftieth Annual Commencement, Wednesday

First Examination for Admission to the College of Letters, the Engineering Department, and the Divinity School

JUNE 21. Algebra, 9 to 10.30 A.M.; English, 10.30 A.M. to 12.30 P.M.; Plane Geometry, 2 to 4 P.M.; Physics, 4 to 5 P.M.; Drawing, 4 to 6 P.M.

JUNE 22. Elementary and Advanced Latin, 9 to 12 A.M.; Advanced Mathematics, 9 to 11 A.M.; Natural History (two subjects), 11 A.M. to 1 P.M.; History, 2 to 4 P.M.; Chemistry, 4 to 5 P.M.

JUNE 23. Advanced German and French, 9 to 11 A.M.; Elementary German and French, 11 A.M. to 12.30 P.M.; Elementary and Advanced Greek, 2 to 5 P.M.

JUNE 15 to SEPT. 15. Session of the Harpswell Laboratory

Summer Vacation, Thirteen Weeks

Second Examination for Admission to the College of Letters, the Engineering Department, and the Divinity School

SEPT. 15. Advanced German and French, 9 to 11 A.M.; Elementary German and French, 11 A.M. to 12.30 P.M.; Elementary and Advanced Greek, 2 to 5 P.M.

SEPT. 17. Algebra, 9 to 10.30 A.M.; English, 10.30 A.M. to 12.30 P.M.; Plane Geometry, 2 to 4 P.M.; Physics, 4 to 5 P.M.; Drawing, 4 to 6 P.M.

SEPT. 18. Elementary and Advanced Latin, 9 to 12 A.M.; Advanced Mathematics, 9 to 11 A.M.; Natural History (two subjects), 11 A.M. to 1 P.M.; History, 2 to 4 P.M.; Chemistry, 4 to 5 P.M.

SEPT. 20. College year begins, Thursday morning
Registration of all students at the Secretary's office
Major departments and plans of study for the first half-year must be reported before 4 P.M. of this day

SEPT. 21. All classes meet for fifteen-minute periods, Friday

SEPT. 22. Regular College exercises begin, Saturday

SEPT. 22. Entrance examinations at the Medical and Dental Schools, Saturday, 10 A.M.

SEPT. 26. Lectures begin in Medical and Dental Schools, Wednesday, 3 P.M.

SEPT. 30. Russell Lecture, Sunday, 4.30 P.M.

NOV. 21. Announcement of Academic Honors, 12 M., Wednesday

NOV. 28. Thanksgiving recess begins, Wednesday, at 1 P.M.

DEC. 2. Thanksgiving recess ends, Sunday evening

DEC. 19. Christmas recess begins, Wednesday, 12.45 P.M.

DEC. 31. Christmas recess ends, Monday, 2 P.M..

1907

JAN. 28. Mid-year examinations begin in the College of Letters and the Engineering Department, Monday

FEB. 9. End of the first half-year, Saturday

FEB. 11. Second half-year begins, Monday

Historical Sketch

Tufts College was established under a charter granted on the twenty-first day of April, 1852, by the General Court of Massachusetts. Under this charter, as later amended, the College is empowered "to confer such degrees as are usually conferred by colleges in New England." Its organization now comprises the College of Letters, the Divinity School, the Medical School, and the Dental School. The College of Letters gives the degrees of Bachelor of Arts, Bachelor of Philosophy, and, for special courses in science and engineering, Bachelor of Science; also the graduate degrees of Master of Arts, Master of Science, Doctor of Philosophy, Civil, Electrical, and Mechanical Engineer. The course in the Divinity School leads to the degree of Bachelor of Divinity; that in the Medical School to the degree of Doctor of Medicine; and that in the Dental School to the degree of Doctor of Dental Medicine.

The Foundation.—The movement resulting in the founding of the College was set on foot in 1847, through the efforts of the Rev. Thomas J. Sawyer, of New York, the Rev. Hosea Ballou, 2d, of Medford, and the Rev. Thomas Whittemore, of Cambridgeport. After much consideration, the work of raising a fund of one hundred thousand dollars for a foundation was undertaken, under the direction of the Rev. Otis A. Skinner, of Boston. About sixty thousand dollars was obtained in money. Sylvanus Packard gave his bond for twenty thousand dollars additional, and Charles Tufts gave twenty acres of land on Walnut Hill, embracing the present site of the College. Mr. Tufts announced his intention of increasing his gift of land to more than one hundred acres, and thus became the largest benefactor of the young institution, which accordingly received his name. Mr. Packard was a Boston merchant, who from the

beginning made the College a peculiar care, and bequeathed to it his entire fortune. Among other benefactors who may be numbered among the founders of the College were Oliver Dean, who gave it ninety thousand dollars, and Thomas A. Goddard, whose gifts, though unobtrusive, were constant. Mrs. Goddard continued the generosity of her husband, and at her death made a substantial bequest to the College. Dr. William J. Walker also made gifts and bequests amounting to nearly three hundred thousand dollars.

While the College owed its beginning to the effort and the support of members of the Universalist denomination, it was provided by the Legislature in the charter that

"No instructor in said college shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said college, on account of the religious opinions he may entertain."

This provision has always been interpreted by the Trustees and Faculty in its broadest sense. The non-sectarian character of the work of the College is amply shown by the membership of its Faculty and student body. The truth, and not the maintenance of any religious or political doctrine, has been the aim of its research and its instruction.

The College of Letters.—The first Faculty meeting was held October 9, 1854, when there were in College students forming the Sophomore and the Freshman class. The only building at that time was the main College Building, now known as Ballou Hall. The next building to be erected was a small brick dormitory, now the Library building. The large dormitory known as East Hall was the next addition to the group, and in 1872 West Hall was opened to students. It was ten years before building operations were renewed by the College. The original Faculty numbered five. The first class, of three members, was graduated in 1857.

At the outset, provision was made for a course of study leading to the degree of Bachelor of Arts. The only feature of its

work peculiar to Tufts College in these years of its beginning was the attention given to the study of history. The first president of the College, the Rev. Hosea Ballou, 2d, D.D., was likewise Professor of History and of Intellectual Philosophy, and gave instruction in history remarkable alike for its quantity and quality, at a time when the study was hardly recognized in American colleges.

Dr. Ballou was succeeded in the presidency by the Rev. Alonzo Ames Miner, D.D., LL.D., who was inaugurated in 1862, and continued in office until 1875, resigning in February of that year. Dr. Miner's incumbency was marked by large financial additions to the College, and by the further growth of a broad and scholarly spirit.

In March, 1875, the Rev. Elmer Hewitt Capen, D.D., was elected to the presidency of the College, vacated by the resignation of President Miner, and he was inaugurated on the second day of June. Dr. Capen's administration, which was characterized by the expansion of the College to university proportions, and was marked by the material and intellectual advance of all departments, was terminated by his death, March 22, 1905.

Rev. F. W. Hamilton, D.D., was appointed acting president in 1905.

The Engineering courses were begun in 1869 with a department of Civil Engineering. The great development of electrical science was promptly recognized, and a department of Electrical Engineering was opened to students in 1882, a professorship in the subject being established in 1890. This side of the College work had rapid development: in 1894 the field was broadened by the addition of a course in Mechanical Engineering, and 1898 by one in Chemical Engineering. In these courses effort has always been made to give thorough practical training. The will of the late Henry B. Pearson, founding the Bromfield-Pearson School, and putting it into the hands of the Trustees of Tufts College to administer, provided a thoroughly-equipped building for technical instruction, of great value in drawing, pattern-making, machine and forge work. The Brom-

field-Pearson building was completed in the fall of 1894. Robinson Hall, completed in 1900, gives to the technical courses a modern building with every facility for their work. It is given in memory of the late Charles Robinson, LL. D., sometime President of the Trustees, by his heirs.

In 1881 the late Phineas T. Barnum gave fifty-five thousand dollars for the establishment of the Barnum Museum of Natural History, and by his last will he bequeathed forty thousand dollars more. The main Museum building was completed in 1884. The west wing, containing the new biological laboratories, was erected in 1894. The years 1882 and 1883 saw the completion of Goddard Chapel, given by Mrs. Mary T. Goddard as a memorial of her husband, the first treasurer of the College. Goddard Gymnasium, a gift from the same source, was also completed in 1883. The gymnasium has been enlarged and transformed into what is practically a new building. Dean Hall was erected in 1887 from funds bequeathed by the late Oliver Dean. In the College year 1894-95 two new buildings were opened, in addition to the west wing of the Barnum Museum. These were the Chemical building and Curtis Hall, containing students' rooms, a dining-hall, and the post-office.

The development of the College in its internal life has been the notable fact of recent years. In 1866 the degree of Bachelor of Philosophy was offered to students who should pursue a prescribed course of two years, the object being to provide for those who had been prepared only in English subjects. This course was maintained until 1875, when it was changed to a course of four years. The requirements for admission were then made the same as for the regular course, except that Greek as a condition of entrance was omitted, and an amount of work in French or German, considerably less than its equivalent, was substituted. In 1891 a new course of study, leading to the degree of Bachelor of Arts, was offered, with an entrance requirement believed to be fully the equivalent of the Greek, in two modern languages. This was one important step taken by the

College toward the broadening of its opportunities, but it soon proved to be insufficient. There had been a steady growth for many years in the amount of work done, and in the number of departments of learning represented. Two new departments had been instituted in 1892, in response to the tendencies of educational development,—those of Biology and History. Departments of Music and Philosophy have since been added, the work in Political Science has been broadened and provision made for the study of Public Law. In the fall of 1893 it seemed possible to take another step and to put into operation the present plan of work, which is believed to be an approach to a rational co-ordination and connection of the college and university systems. The principle which governed this adjustment of the College curriculum has been applied to the new entrance requirements.

There were opened in 1895 courses of four years each in Biology, Chemistry, General Science, and Medical Preparatory work, leading to the degree of Bachelor of Science, and accessible to graduates of all good high schools. Bachelors of Science and Philosophy may, if they desire, go on to the attainment of the degree of Bachelor of Arts.

In response to a pressing demand the college was, in the Summer of 1892, opened to women on the same terms as to men. In the fall of 1894 there was opened, for the accommodation of women students, Metcalf Hall, the gift of Albert Metcalf, of Newton. The Start House now offers home-like rooms for women students.

The Professional Schools.—The will of Mr. Packard required that a professor of Christian Theology should be maintained from the income of funds bequeathed by him. The Rev. Thomas J. Sawyer, D.D., was elected Packard Professor in 1869. This was the beginning of the Divinity School. In 1882 the school had developed so that its Faculty received a definite organization, and Dr. Sawyer became the first Dean, retaining the office until his retirement as Packard Professor

Emeritus in 1892. He was succeeded by the present Dean, Rev. Charles H. Leonard, D.D. From the erection of West Hall until the completion of the separate buildings of the school, the western side of West Hall was occupied by the Divinity School. In 1892, by the gift of ex-President Miner, the school was provided with Miner Hall, containing the library, class rooms, chapel and reception room; and at the same time, largely through the efforts of the Dean, the money was obtained to build Paige Hall, a dormitory for students of the Divinity School.

In 1903 a five-year course was offered to students of divinity, combining subjects required for a proper professional equipment with studies that look toward liberal culture. At the successful completion of this course the degrees A.B. and B.D. are both awarded.

In 1893 Tufts College met what seemed to be a need of the community by opening the Tufts Medical School. The growth of the school in efficiency and numbers justified its institution. The course is four years in length, and, as in other departments of the College, women stand upon the same terms as men.

The Medical School found its complement in the Tufts Dental School, organized in 1899 by the absorption of the Boston Dental College, which was incorporated in 1868, and has a numerous body of alumni. The equipment, funds, and good will of this school passed to Tufts College.

Administration.—The control of the College is vested by the charter in a self-perpetuating body of Trustees, not to exceed thirty in number. As the College has matured the number of its alumni upon the Board of Trustees has steadily increased. To give the Alumni as a whole a direct representation in the administration, a Board of Overseers has been instituted. The several Faculties are appointed by the Trustees, with the approval of the Overseers.

THE COLLEGE CHARTER

SECTION 1. B. B. Mussey, Timothy Cotting, Richard Frothingham, Jr., their associates and successors, are hereby constituted a body corporate by the name of the Trustees of Tufts College, in Medford, and they and their successors, and such as shall be duly elected members of said corporation, shall be and remain a body corporate by that name forever. And for the orderly conducting of the business of said corporation, the said Trustees shall have power and authority, from time to time, as occasion may require, to elect a President, Vice-President, Secretary and Treasurer, and such other officers of said corporation as may be found necessary, and to declare the duties and tenures of their respective offices; and also to remove any Trustee from the same corporation, when in their judgment he shall be rendered incapable, by age or otherwise, of discharging the duties of his office, or shall neglect or refuse to perform the same; and also, from time to time, to elect new members of the said corporation; provided, nevertheless, that the number of members shall never be greater than thirty.

SEC. 2. The said corporation shall have full power and authority to determine at what times and places their meetings shall be holden, and the manner of notifying the Trustees to convene at such meetings, and also, from time to time, to elect a President of said College, and such professors, tutors, instructors, and other officers of the said College as they shall judge most for the interest thereof, and to determine the duties, salaries, emoluments, responsibilities, and tenures of their several offices. And the said corporation are further empowered to purchase or erect, and keep in repair, such houses and other buildings as they shall judge necessary for the said College; and also to make and ordain, as occasion may require, reasonable rules, orders, and by-laws, not repugnant to the Constitution and Laws of this Commonwealth, with reasonable penalties, for the good government of the said College, and for the regulation of their own body; and also to determine and regulate the course of instruction in said College, and to confer such degrees as are usually conferred by colleges in New England; provided, nevertheless, that no corporate business shall be transacted at any meeting unless one-third, at least, of the Trustees are present.

SEC. 3. The said corporation may have a common seal, which they may alter or renew at their pleasure, and all deeds sealed with the seal of said corporation, and signed by their order, shall, when made in their corporate name, be considered in law as the deeds of said corporation; and said corporation may sue and be sued in all actions, real, personal, or mixed; and may prosecute the same to final judgment and execution by the name of the Trustees of Tufts College; and said corporation shall be capable of taking and holding in fee simple, or any less estate, by gift, grant, bequest, devise, or otherwise, any lands, tenements, or other estate,

real or personal, provided, that the clear annual income of the same shall not exceed two hundred thousand dollars.*

SEC. 4. The clear rents and profits of all the estate, real and personal, of which the said corporation shall be seized and possessed, shall be appropriated to the endowment of said College in such manner as shall most effectually promote virtue and piety, and learning in such of the languages, and of the liberal and useful arts and sciences, as shall be recommended from time to time by the said corporation, they conforming to the will of any donor or donors in the application of any estate which may be given, devised, or bequeathed, for any particular object connected with the College.

SEC. 5. No instructor in said College shall ever be required by the Trustees to profess any particular religious opinions as a test of office, and no student shall be refused admission to or denied any of the privileges, honors, or degrees of said College on account of the religious opinions he may entertain.

SEC. 6. The Legislature of this Commonwealth may grant any further powers to, or alter, limit, annul, or restrain any of the powers vested by this act in the said corporation, as shall be found necessary to promote the best interests of the said College, and more especially may appoint and establish overseers or visitors of the said College, with all necessary powers for the better aid, preservation, and government thereof.

SEC. 7. The granting of this Charter shall never be considered as any pledge on the part of the Government that pecuniary aid shall hereafter be granted to the College.

THE CONSTITUTION OF THE BOARD OF OVERSEERS

SECTION 1. There shall be, and hereby is established, a Board of Overseers of Tufts College.

This Board shall consist of the President of the College, *ex officio*, and sixteen other persons, who shall have received a degree from the College, in course, not less than ten years previous to their election, provided that not less than twelve members of said Board at any time shall be persons who have taken the degree of A. B., S. B., or Ph. B., in course from Tufts College.

No officer of instruction in Tufts College shall be eligible to election to the Board of Overseers, and if an Overseer be appointed to such office of instruction, his position as Overseer shall be thereby vacated.

No Trustee of Tufts College shall be eligible to election to the Board of Overseers, and any member of the Board of Overseers becoming a Trustee of Tufts College shall thereby cease to be an Overseer.

* limitation as to income has been removed recently by statute.

No person shall be eligible for election to the Board of Overseers for more than two successive full terms.

Persons elected to the Board of Overseers must qualify by accepting such election in writing within three months from receipt of notice thereof.

SEC. 2. All persons who have received from the College a degree in regular course, or an honorary degree, shall be entitled to vote for Overseers, provided that no person who has received any degree in regular course shall be entitled by virtue thereof to vote for Overseers before the fifth annual election following receipt of such degree.

SEC. 3. For the purpose of the first election of Overseers a Committee of ten shall be appointed, five chosen by the Trustees of the College, and five chosen by the Association of the Alumni of Tufts College, or its Executive Committee. This committee shall nominate not less than thirty-two candidates, and ballots prepared on the so-called Australian system shall be sent by mail not later than August 1, 1899, to the last known address of every person entitled to vote under the conditions hereinbefore set forth. Such persons may send their ballots, duly signed, to some person designated by said Nominating Committte, so that they may be received at least not later than September 9, 1899, and the sixteen candidates having the largest number of votes shall be declared elected, provided that the provisions of Section 1, regarding eligibility, must not be infringed upon.

The said Nominating Committee shall receive and count the ballots, and ascertain the result of the election. They shall thereupon make report of their proceedings to the Trustees, and shall cause the names of the persons elected to be posted at the College, the first day of the Fall Term. The Secretary of the Trustees shall notify the members-elect of their election and of the first meeting, to be called at such time and place as the President of the College shall designate.

At the first meeting after the first election the elected members of the Board shall be divided by lot into four classes, to hold office one, two, three, and four years, respectively. The term of office of Overseers subsequently elected shall be four years, provided that elections to fill vacancies shall be for the unexpired portion of the term.

After the first election, such vacancies as occur, either by expiration of term or otherwise, shall be filled by an annual election, to be held under such regulations as the Overseers may make, subject, however, to the provisions as to eligibility and right of suffrage herein contained, and provided that voting shall be by mail and according to the so-called Australian system of balloting.

SEC. 4. The Trustees of Tufts College shall submit to the Overseers for approval all nominations for officers of instruction in all departments of the College, whether permanent or temporary, of or above the grade

of instructor, together with all votes providing for changes in or additions to departments of instruction. Upon notice of such action as hereinbefore specified, the Overseers may approve or disapprove the same, and notice of the action of the Overseers shall be communicated to the Trustees forthwith, provided that failure to act promptly upon any matter submitted to the Overseers shall be taken as approval.

The Overseers shall have power to recommend to the Trustees such action in any matter of college management or government, not purely financial, as may seem to them advisable, including the power to nominate officers of instruction and government.

SEC. 5. The Overseers shall elect a President and a Secretary. It shall be the duty of the Secretary to notify the Trustees of all action taken upon all matters submitted to the Overseers by the Trustees.

The Overseers shall hold stated meetings at such time as they may by general rules determine. The Executive Committee of the Trustees may order special meetings at any time.

The Overseers may adopt regulations and by-laws for the transaction of their business, not inconsistent herewith, and may declare a vacancy in their Board whenever in their judgment sufficient cause exists. No pecuniary liability shall be incurred by the Overseers, except by the authority of the Executive Committee of the Trustees.

THE ADMINISTRATION OF THE COLLEGE

The Trustees

President

HOSEA WASHINGTON PARKER

Vice-President

THOMAS HENRY ARMSTRONG

Secretary

HENRY WARREN RUGG, Providence, R. I.
Boston office, 24 Milk St.

Treasurer

ARTHUR ELLERY MASON, 24 Milk St., Boston

Executive Committee

FREDERICK WILLIAM HAMILTON, *Chairman*

HENRY WARREN RUGG	HENRY DUDLEY WILLIAMS
BYRON GROCE	SUMNER ROBINSON
ALBERT METCALF	THOMAS CUNNINGHAM
THOMAS HENRY ARMSTRONG	ROBERT ROBINS ANDREWS

Committee on Finance

WALTER EDWARD PARKER, *Chairman*

WILLIAM WALDEMAR SPAULDING	J. FRANK WELLINGTON
ARTHUR ELLERY MASON	JAMES ARTHUR JACOBS

Trustees

CHARLES SCOTT FOBES, A.M. . . . . Portland, Me.
THOMAS HENRY ARMSTRONG, A.M. . . . . Waltham
HENRY WARREN RUGG, D.D. . . . . Providence, R. I.
JOHN COLEMAN ADAMS, A.M., D.D. . . . . Hartford, Conn.
BYRON GROCE, A.M., LITT.D. . . . . Boston
ARTHUR ELMER DENISON, A.B. . . . . Cambridge
HENRY DUDLEY WILLIAMS, A.M. . . . . Boston
WILLIAM OSCAR CORNELL, A.M. . . . . Providence, R. I.
HOSEA WASHINGTON PARKER, A.M. . . . Claremont, N. H.
WALTER EDWARD PARKER, A.M. . . . . Lawrence
WILLIAM WALDEMAR SPAULDING, A.B. . . . . Haverhill
DAVID CUMMINGS, A.M. . . . . Somerville
FRED STARK PEARSON, A.M.M., S.D., LL.D. . . New York, N.Y.

CHARLES EWELL MORRISON, A.M., LL.D. . . . . Boston
SUMNER ROBINSON, A.M., LL.B. . . . . Newton
ALBERT METCALF, A.M. . . . . Newton
JOHN WILKES HAMMOND, A.B., LL.D. . . . . Cambridge
FREDERICK WILLIAM HAMILTON, A.M., D.D. . . . . Boston
J. FRANK WELLINGTON, A.M. . . . . Somerville
WILLIAM ERASTUS GIBBS, A.B., D.D. . . . . Lawrence
ARTHUR ELLERY MASON, A.M. . . . . Boston
ROBERT ROBBINS ANDREWS, A.M., D.D.S. . . . . Cambridge
THOMAS CUNNINGHAM, A.M. . . . . Boston
JAMES ARTHUR JACOBS, A.M. . . . . Boston

The Overseers

President

EDWARD HENRY CLEMENT, A.M., LITT.D.

Secretary

ARTHUR WINSLOW PEIRCE, LITT.D.

Term expires in 1906

EDWARD HENRY CLEMENT, A.M., LITT.D.
ARTHUR WINSLOW PEIRCE, LITT.D.
SAMUEL WARREN MENDUM, A.M.
MILTON GERRY STARRETT, A.M.B., SC.D.

Term expires in 1907

ALPHONSO HOLLAND CARVILL, A.M., M.D.
EDWIN GINN, A.M., LITT.D.
FRANK MORTIMER HAWES, A.M.
FRANK THOMAS DANIELS, A.M.B.

Term expires in 1908

FRANCIS BISHOP HARRINGTON, A.B., M.D.
FRED GOWING, PH.D.
HIRAM AUGUSTUS TUTTLE, A.M.
ARTHUR WINFIELD DEGOOSH, A.B., LL.B.

Term expires in 1909

* WALTER PARKER BECKWITH, A.M., PH.D.
HENRY BLANCHARD, A.M., D.D.
WILLIAM DAVIS THAYER TREFRY, A.B.
MINTON WARREN, PH.D., LL.D.

* Deceased

BOARDS OF VISITORS

[Appointed by the Overseers]

To the College of Letters

FRANK MORTIMER HAWES, A.M.
FRANK THOMAS DANIELS, A.M.B.
FRED GOWING, PH.D.
FREDERICK CROSBY HODGDON, A.B.
CHARLES NEAL BARNEY, A.B.

To the Divinity School

HENRY BLANCHARD, A.M., D.D.
ALPHONSO HOLLAND CARVILL, A.B., M.D.
HIRAM AUSTIN TUTTLE, A.M.
WILLIAM ERASTUS GIBBS, D.D.
LEVI MOORE POWERS, D.D.

To the Medical School

FRANCIS BISHOP HARRINGTON, A.B., M.D.
ARTHUR WINFIELD DEGOOSH, A.B, LL.B.
QUINCY ADAMS SHAW, JR, A.B.
CHARLES SEDGWICK RACKEMANN, A.M.
WILLIAM LINCOLN PARKER

To the Dental School

SAMUEL WARREN MENDUM, A.M.
EDWIN ELWELL DAVIS, D.D.S.
QUINCY ADAMS SHAW, JR, A.B.
CHARLES SEDGWICK RACKEMANN, A.M.
WILLIAM LINCOLN PARKER

Directors of the Women

[Appointed by the Trustees]

MRS. CARRIE BULLARD LEWIS
MRS. EUNICE FOSTER RANSOM
MRS. ABBY BREWSTER CUSHMAN

Officers of Instruction and Government*

FREDERICK WILLIAM HAMILTON, A.M., D.D. . . Tufts College
ACTING PRESIDENT

CHARLES HALL LEONARD, A.M., D.D., LL.D. . 120 Packard Ave.
Goddard Professor of Homiletics and Pastoral Theology, and Dean of the Divinity School

JEROME SCHNEIDER, PH.D. . . . . 28 Professors Row
Professor of Greek

EDWIN CORTLANDT BOLLES, PH.D., D.D., LL.D. 184 College Ave.
Dickson Professor of English and American History

WILLIAM ROLLIN SHIPMAN, A.M., D.D., LL.D. . 101 Talbot Ave.
Goldthwaite Professor of Rhetoric, Professor of Logic, and Dean of the Faculty of the College of Letters

HENRY WATSON DUDLEY, M.D. . . . . Abington
Professor of Pathology, Emeritus, and Lecturer on Legal Medicine

CHARLES PAINE THAYER, A.M., M.D. . . . . 69 Gainsboro St.
Professor of Anatomy, Emeritus

CHARLES DURLIN BRAY, C.E., A.M. . . . . 98 Professors Row
Professor of Mechanical Engineering

JOHN LEWIS HILDRETH, A.M., M.D., LL.D.
Professor of Clinical Medicine, Emeritus 14 Garden St., Cambridge

AMOS EMERSON DOLBEAR,† M.E., PH.D., LL.D.
Professor of Physics 134 Professors Row

ERNEST WATSON CUSHING, A.B., M.D., LL.D. . 168 Newbury St.
Professor of Abdominal Surgery and Gynaecology

GEORGE MILFORD HARMON, A.M., D.D. . . . . 114 Curtis St.
Professor of Biblical Theology

CHARLES ERNEST FAY, A.M., LITT.D. . . . . 92 Professors Row
Wade Professor of Modern Languages

* The members of the Faculty, with the exception of the President, are arranged in the order of the time at which their first academic degrees were taken, or the time of their studies, where an academic degree was not taken in course. A separate list of Lecturers and Assistants is provided.

† Absent on leave.

HENRY JABES BARNES, M.D. . . . . 429 Beacon St.
Professor of Hygiene

WILLIAM GEORGE TOUSEY, A.M., D.D. . . . 106 Professors Row
Ryder Professor of Ethics and the Philosophy of Theism

EDWARD OSGOOD OTIS, A.B., M.D. . . . . 381 Beacon St.
Professor of Pulmonary Diseases and Climatology

GEORGE THOMSON KNIGHT, AM., D.D. . . . 114 Professors Row
Packard Professor of Christian Theology

CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree
Professor of General Chemistry

EDGAR OSGOOD KINSMAN, D.M.D. . . 15 Brattle Sq,, Cambridge
Instructor in Clinical Dentistry

WARREN SAMUEL WOODBRIDGE, A.M., D.D. 32 Pearl St, Medford
Woodbridge Professor of Applied Christianity

——— ———
Pearson Professor of Geology and Mineralogy

JOHN STERLING KINGSLEY, Sc.D. . . . . 128 Professors Row
Professor of Biology, and Dean of the Graduate Department

ARTHUR MICHAEL, A.M., PH.D. . . . . 27 Brimmer St.
Professor of Chemistry

MORTON PRINCE, A.B., M.D. . . . . 458 Beacon St.
Professor of Diseases of the Nervous System

HAROLD WILLIAMS, A.B., M.D., LL.D. . . . . 528 Beacon St.
Professor of the Theory and Practice of Medicine, and Dean of the Medical and Dental Schools

HENRY BECKLES CHANDLER, C.M., M.D. . . 34 1-2 Beacon St.
Professor of Ophthalmology

HENRY HILDRETH PIPER, D.M.D. . . 71 Sycamore St., Somerville
Instructor in Clinical Dentistry

HERBERT WARREN WHITE, M.D. . 151 Humboldt Ave., Roxbury
Assistant Professor of the Theory and Practice of Medicine

GARDNER WELD ALLEN, A.B., M.D. . . . . 419 Boylston St.
Assistant Professor of Genito-Urinary Surgery

WILLIAM LESLIE HOOPER, A.M., PH.D. . . . 124 Professors Row
Professor of Electrical Engineering

JAMES SULLIVAN HOWE, M.D. . . . . 437 Marlborough St.
Professor of Dermatology

EDWARD MAVERICK PLUMMER, M.D. 5 Adams St., Charlestown
Professor of Otology

GARDNER CHACE ANTHONY, A.M., Sc.D. . . 14 Professors Row
Professor of Technical Drawing, and Dean of the Department of Engineering

FREDERIC MELANCTHON BRIGGS, A.B., M.D.,
31 Massachusetts Ave.
Professor of Clinical Surgery, and Secretary of the Medical and Dental Faculties

HOWARD SUMNER DEARING, A.M., M.D. . . . 607 Tremont St.
Assistant Professor of Clinical Medicine

BYRON HOWARD STROUT, D.D.S. . . . . Taunton
Assistant Professor of Operative Technics, and Instructor in Anaesthesia

FRANK GEORGE WHEATLEY, A.M., M.D. . . . . North Abington
Professor of Materia Medica and Therapeutics

EDWARD WALTER BRANIGAN, A.M., D.D.S.
Professor of Clinical Dentistry 2 Commonwealth Ave.

JOSEPH KING KNIGHT, D.D.S. . . . . Hyde Park
Professor of Prosthodontia

EDWARD BINNEY LANE, A.B., M.D. . . . . 419 Boylston St.
Professor of Mental Diseases

EDWARD LAMBERT TWOMBLY, A.B., M.D. . . . 483 Beacon St.
Instructor in Clinical Gynaecology

GEORGE LYLE MARSHALL, D.D.S. . . . 21 Warren St., Somerville
Instructor in Prosthetic Dentistry

GEORGE HAMLIN WASHBURN, A.B., M.D. . 377 Marlborough St.
Professor of Obstetrics

ARTHUR EVERETT AUSTIN, A.M., M.D. 163 Suffolk Road,
Professor of Medical Chemistry and Toxicology Chestnut Hill

WALTER IRVING BRIGHAM, D.D.S. . . . . S. Framingham
Assistant Professor of Operative Dentistry

CHARLES MELVILLE WHITNEY, M.D., ... 591 Tremont St.
Instructor in Genito-Urinary Diseases

HENRY MARTIN HILLS, D.D.S. . . . . 2 Commonwealth Ave.
Instructor in Clinical Dentistry

HORACE DAVID ARNOLD, A.B., M.D. . . . . 427 Beacon St.
Professor of Clinical Medicine

GEORGE ANDREW BATES, M.S., D.M.D. . . . . Auburndale
Professor of Histology

FREDERICK MORTIMER HEMENWAY, D.D.S. . 175 Tremont St.
Professor of Prosthetic Dentistry

FRED CARVILL MERRILL, D.D.S. . . . . Wollaston
Instructor in Prosthetic Dentistry

WILLIAM RICE, D.M.D. . . . . 845 Boylston St.
Instructor in Clinical Dentistry

KARL AUGUST HOCH, M.D. . . . . MacLean Asylum, Waverley
Instructor in Neuro-Pathology

WILLIAM PRESTON HOUSTON, D.D.S. . . . . 419 Boylston St.
Instructor in Clinical Dentistry

GEORGE WARTON KAAN, M.D. . . . . 419 Boylston St.
Professor of Clinical Gynaecology

JOHN JENKS THOMAS, A.M., M.D. . . . . 88 Bay State Road
Instructor in Neurology and Neuro-Pathology

JOHN LINCOLN AMES, A.B., M.D. . . . . 72 Chestnut St.
Assistant Professor of Clinical Medicine

WILLIAM ELISHA CHENERY, A.B., M.D. . . 222 Huntington Ave.
Professor of Laryngology

HERBERT ERNEST CUSHMAN, B.D., A.M., PH.D.
Professor of Philosophy 48 Professors Row

LEO RICH LEWIS, A.M. . . . . 20 Professors Row
Professor of the History and Theory of Music

DAVID LEE MAULSBY, A.M. . . . . 80 Curtis St.
Professor of English Literature and Oratory

FRANK BERRY SANBORN, C.E., M.S.
Professor of Civil Engineering 10 Buena Vista Park, Cambridge

FRANK WILLIAMS DURKEE, A.M. . . . . 38 Professors Row
Professor of Inorganic Chemistry

ROBERT WORTHINGTON HASTINGS, A.M., M.D.
Instructor in the Theory and Practice of Medicine, and Assistant in Pediatrics 45 Kilsyth Road, Brookline

WALTER SUMNER KENYON, D.D.S. . . . . Providence, R. I.
Instructor in Clinical Dentistry

KNUT JOSEPH LUTTROPP, D.D.S. . . . . 419 Boylston St.
Demonstrator in Operative Dentistry and Instructor in Porcelain Work

EDWARD ALLEN PEASE, A.B., M.D. . . . . 483 Beacon St.
Instructor in Clinical Surgery and Assistant in Clinical Gynaecology

EDMUND CHANNING STOWELL, A.B., M.D.
Assistant Professor of Children's Diseases 69 Adams St., Dorchester

RICHARD FITCH CHASE, M.D. . . . . 246 Huntington Ave.
Instructor in Clinical Medicine, and Lecturer on Gastro-Intestinal Diseases

JOHN NELSON COOLIDGE, A.B., M.D. . . . 409 Marlborough St.
Instructor in Clinical Medicine

THEODORE CHARLES ERB, M.D. . . . . 159 St. Botolph St.
Instructor in Obstetrics

ARTHUR WILLARD FAIRBANKS, M.D. . . . . 591 Beacon St.
Instructor in Clinical Medicine

JOHN WOOD FORBES, D.M.D. . . . . 419 Boylston St.
Instructor in Clinical Dentistry

CHARLES DAVISON KNOWLTON, M.D. . 574 Warren St., Roxbury
Instructor in Pathology and Bacteriology

EUGENE THAYER, A.M., M.D. . . . 2683 Washington St., Roxbury
Demonstrator of Anatomy

GEORGE VAN NESS DEARBORN, B.D., M.D., A.M., PH.D.
Professor of Physiology 6 Mason St., Cambridge

FREDERICK STEARNS HOLLIS, S.B., PH.D. . Newton Highlands
Instructor in Medical Chemistry

FRANCIS DENNIS DONOGHUE, M.D. . . . . 409 Marlborough St.
Instructor in Operative Surgery

FREDERICK WARREN PEARL, A.B., M.D.
Instructor in Operative and Clinical Surgery, and Assistant Demonstrator of Anatomy Hotel Vendome, Commonwealth Ave.

EDWARD HENRY ROCKWELL, S.B. 133 Powder House Boulevard,
Assistant Professor of Civil Engineering Somerville

EDWARD ELIPHALET THORPE, M.D. . . . . 711 Boylston St.
Instructor in Medical Chemistry

CHARLES BALFOUR DARLING, A.B., M.D.
Instructor in Clinical Gynaecology 27 Rockville Park, Roxbury

WILLIAM KENDALL DENISON, A.M. . . . . 126 Packard Ave.
Professor of the Latin Language and Literature

TIMOTHY LEARY, M.D. . . . . 20 Sunset St., Roxbury
Professor of Pathology and Bacteriology

CHARLES FAIRBANK PAINTER, A.B., M.D. . . 86 Bay State Road
Assistant Professor of Orthopedic Surgery

FRANK PERCIVAL WILLIAMS, M.D. . . . . 419 Boylston St.
Instructor in Rectal Diseases

CHARLES HARRIS CHASE, S.B. . . . . Stoneham
Assistant Professor of Steam Engineering

WILLIAM MARTIN FLYNN, D.M.D. . . 474D Broadway, S. Boston
Instructor in Clinical Dentistry

JOHN INNES FRENCH, M.D. . . . . 2A Park St.
Assistant Professor of Pharmacology

WILLIAM HERBERT GRANT, M.D. . . . . 845 Boylston St.
Instructor in Clinical Gynaecology

RICHARD FROTHINGHAM O'NEIL, M.D. . . . . 379 Beacon St.
Demonstrator of Surgical Apparatus and Bandaging

HARRY GRAY CHASE, B.S. . . . . 2 Curtis Ave.
Assistant Professor of Physics, and Secretary of the Faculty of Arts and Sciences

BURLEIGH CHILDS GILBERT, D.D.S. . . . . Stoneham
Instructor in Clinical Dentistry

RALPH CLINTON LARRABEE, A.B., M.D., ... 912 Beacon St.
Instructor in Clinical Medicine and Haematology

JOHN SHEPARD MAY, M.D. . . . . 219 Warren St., Roxbury
Instructor in Obstetrics, and Assistant in Clinical Medicine

ELIZABETH ANGELA RILEY, M.D. . . . . 483 Beacon St.
Instructor in Gynaecology and Abdominal Surgery

FRANK LEE DRUMMOND RUST, M.D. . . . . 543 Boylston St.
Associate Professor of Ophthalmology

SAMUEL CHANDLER EARLE, A.M.
Assistant Professor of English 9 Electric Avenue, West Somerville

LAWRENCE BOYD EVANS, PH.D. . . . . 2 Dean Hall
Professor of History

HARRY HOMER GERMAIN, M.D. . . . . 4 Arlington St.
Assistant Professor of Anatomy

JAMES WILLIAM HINCKLEY, M.D. . . . . 18 Huntington Ave.
Instructor in Obstetrics

ERVIN ARTHUR JOHNSON, D.M.D. . . . . 176 Federal St.
Instructor in Clinical Dentistry

FRED DAYTON LAMBERT, A.M., PH.D. . . . . 16 Dearborn Road
Assistant Professor of Biology

HENRY CLAYTON METCALF, A.B., PH.D. . . . 92 Professors Row
Jackson Professor of Political Science

FREDERICK BOOTH STEVENS, D.D.S. . . Everett Sq., Hyde Park
Instructor in Clinical Dentistry

CHARLES ST.CLAIR WADE, A.M. . . . . 16 Conwell Ave.
Professor of the Greek Language and Literature

THOMAS WHITTEMORE, A.B. . . . . Θ Δ X House, Tufts College
Professor of English, and Instructor in the History of Art

FRANK GEORGE WREN, A.M. . . . . 65 Talbot Ave.
Walker Professor of Mathematics

JOSEPH LEE CLAIR TAYLOR, D.D.S. . . . . 108 Dudley St
Instructor in Clinical Dentistry

ELWOOD TRACY EASTON, M.D. . . . . 871 Boylston St.
Instructor in Ophthalmology

LUTHER GORDON PAUL, M.D. . . . . 657 Boylston St.
Instructor in Clinical Surgery, and Assistant Demonstrator of Anatomy

GUY MONROE WINSLOW, A.B., PH.D. . . . . Auburndale
Instructor in Histology

JOHN HANCOCK EATON, D.D.S. . . . . 409 Boylston St.
Instructor in Clinical Dentistry

ALFRED PAUL ROGERS, D.D.S. . . . . Fall River
Instructor in Orthodontia

DANA JOSEPH EDMUNDS, D.D.S. . . . . 2 Commonwealth Ave.
Instructor in Clinical Dentistry

HENRY STETSON ROBINSON, D.D.S. . . . . Attleboro
Instructor in Clinical Dentistry

HARRY CALDWELL PARKER, M.D. . . . . 317 Marlborough St.
Instructor in Ophthalmology

IRVING JOSIAH WETHERBEE, D.M.D. . . . . 129 Boylston St.
Instructor in Clinical Dentistry

WILLIAM RICHARD RANSOM, A.M. . . . . 101 Talbot Ave.
Assistant Professor of Mathematics

ROBERT EATON ANDREWS, A.B., M.D. . 1044 Massachusetts Ave.
Assistant Demonstrator of Anatomy

WILLIAM HOWELL REED, JR. . . . . 81 Walnut Ave., Roxbury
Instructor in German

LIZZIE MAUD CARVILL, A.B., M.D. . 28 Highland Ave., Somerville
Instructor in Physical Training for Women

WALTER GEORGE BRIDGE, D.M.D.
Instructor in Prosthetic Dentistry Cor. Boylston St. and Mass. Ave.

JAMES PROCTOR LOCKHART, D.M.D.
Instructor in Clinical Dentistry 837 Massachusetts Ave., Cambridge

VARNEY ALBERT KELLEY, D.M.D. . . . . 21 Maple St., Danvers
Instructor in Clinical Dentistry

SIDNEY BURT SARGENT, D.M.D. . . . . Rockland
Instructor in Clinical Dentistry

WILLIAM LITTLEFIELD RIPLEY, M.D. . 249 Centre St., Newton
Instructor in Physiology

FREDERICK FINCH STRONG, M.D. . . . . 178 Huntington Ave.
Instructor in Electro-Therapeutics

IVAN ALEXIS TEOFIL CENTERVALL, D.M.D. . . . 2 Park Sq.
Instructor in Clinical Dentistry

CAREY ROSCOE CHESTER, D.M.D. . . . . Malden
Instructor in Clinical Dentistry

GEORGE FRANCIS ASHLEY . . . . . 11 Laurel St., Somerville
Instructor in Drawing

CURTIS WILLIAM FARRINGTON, D.M.D. . 246 Huntington Ave
Instructor in Clinical Dentistry

RALPH WEBSTER RICHARDS, A.M. . . . . 11 Fairmount St.
Instructor in Geology

EDWIN BUTLER ROLLINS, B.S. . . . . 6 West Hall
Instructor in Electrical Engineering

PHILIP HOWARD COBB, A.B., PH.D. . . . . 159 College Ave.
Instructor in Physical and Organic Chemistry

CHARLES EDWARD STEWART, S.B.
Instructor in Shopwork 32 Dearborn Road

JAMES IRWIN TUCKER, B.S. . . . . 39 Pearson Road, Somerville
Instructor in Civil Engineering

PHILIP MESERVE HAYDEN, A.B. . . . . Dean Hall, 6
Instructor in French and Assistant in Latin

ARTHUR MURPHY, JR., A.M. . . . . Curtis Hall, 7
Instructor in Theoretical and Organic Chemistry

MELVILLE SMITH MUNRO, B.S. . . . . 114 Curtis St., Somerville
Instructor in Electrical Engineering

HOWARD ROGERS WHITNEY, B.S. . 107 Sycamore St., Somerville
Walker Special Instructor in Mathematics

SYDNEY CURTIS HARDWICK, M.D. . . . . Quincy
Instructor in Physiology

CHARLES JENKINS CARTER . . . 93 Wenham St., Jamaica Plain
Instructor in Machine Work

LECTURERS, ASSISTANTS, AND OTHERS

WALTER ELMORE FERNALD, M.D. . . . . Waverley
Clinical Lecturer in Mental Diseases

GEORGE TAYLOR BAKER, DD.S. . . . . 149 A Tremont St.
Lecturer on Orthodontia

WILLIAM EASTMAN FAY, A.B., M.D. . . . 366 Commonwealth Ave.
Assistant in Clinical Medicine

CHARLES HENRY WINN, A.M., M.D. . . . . 1474 Tremont St.
Assistant in Clinical Medicine

FRANCIS JOSEPH WELLER, A.B., M.D. . . . . Hotel Nottingham
Assistant in Otology

ELMOND ARTHUR BURNHAM, A.B., M.D. . 154 Huntington Ave.
Assistant in Clinical Medicine

ROBERT MICHAEL MERRICK, M.D. . . 15 Adams St., Dorchester
Assistant in Clinical Medicine

HENRY FOWLER RANSFORD WATTS, M.D. . 6 Monadnock St.
Assistant in Clinical Medicine

LEON EDWARD WHITE, A.B., M.D. . . . . 543 Boylston St.
Assistant in Otology

JOHN PETER TREANOR, M.D. . . . . 3 Howes St., Dorchester
Assistant in Clinical Medicine

THEODORE CHAPIN BEEBE . . . . . 416 Marlborough St.
Assistant Demonstrator of Anatomy and Assistant in Surgery

WILLIAM GRAY ADAMS, M.D. . . . . 101 Newbury St.
Assistant Demonstrator of Anatomy

GEORGE FRANCIS McINTIRE, M.D. . . . 5 Dana St., Cambridge
Assistant Demonstrator of Anatomy

FREDERICK WINSLOW STETSON, A.B., M.D. . . 637 Dudley St.
Assistant in Clinical Medicine

THOMAS JAMES O'BRIEN, PH.G., M.D. 1470 Tremont St., Roxbury
Assistant in Clinical Medicine

JOSEPH HENRY SAUNDERS, A.B., M.D. 217 Harvard St., Brookline
Assistant in Clinical Medicine

JOHN WILLIAM LANE, A.B., M.D. . . . . 665 Boylston St.
Assistant Demonstrator of Anatomy

ADELAIDE OLGA CUSHING-LEARY, M.D.
Assistant in Pathology and Bacteriology 20 Sunset St., Roxbury

ARTHUR THORNTON LEGG, M.D. . . . . 535 Beacon St.
Assistant in Orthopedics and Assistant Demonstrator of Anatomy

CLARENCE HATHORNE STAPLES, A.B., M.D.
Assistant in Haematology 48 Washington St., Malden

WILLIAM ROBIE PATTEN EMERSON, A.B., M.D.
Assistant in Pediatrics 657 Boylston St.

WALTER FREEMAN NOLEN, M.D. . . . . 535 Beacon St.
Assistant Demonstrator of Anatomy

JOHN DONOVAN CLARK, B.S., M.D. . . . . 14 Hancock St.
Assistant Demonstrator of Anatomy

FRANK EUGENE HASKINS, M.D. . . . . 254 Huntington Ave.
Assistant Demonstrator of Anatomy

EDWIN B. NEILSON, M.D. . . . . 214 Newbury St.
Assistant in Gynaecology

HOWARD DEXTER SMITH, B.S., A.M. . . . . East Hall, 10
Assistant in Chemistry

CHESTER BRADSTREET STORY, A.B. . . . . Curtis Hall, 7
Assistant in English

CHANDLER MASON WOOD, A.M. . . . . West Hall, 17
Assistant in History

MARGARET ELIZABETH CARLEY, M.D. . . . . Brighton
Assistant in Physiology

GEORGE EDWARD PEARSON, A.M. 325 Highland Ave., Somerville
Assistant in History

EDISON WILLIAM BROWN, M.D. . . . . 406 Ruggles St.
Assistant in Pathology and Bacteriology

LEON SAMUEL MEDALIA, M.D. . . . . 1070 Boylston St.
Assistant in Pathology and Bacteriology

RAY WILLIAM CLOUGH . . . . . E. Braintree, Vt.
Assistant in General Chemistry

CHARLES HENRY STONE . . . . . Medford Hillside
Assistant in Chemistry

LEON EDWARD DIX . . . . . A T Ω House
Instructor in Mathematics in the Bromfield-Pearson School

Lecturers to the Divinity School

HENRY W. RUGG, D.D. . . . . Providence, R. I.
HAROLD WILLIAMS, A.B., M.D. . . . . Boston
DWIGHT MONSON HODGE, D.D. . . . . Tufts College
CHARLES ELLWOOD NASH, D.D. . . . . Somerville

Laboratory Assistants in the Medical and Dental Schools

Anatomy

GEORGE R. CALLENDER . . . . . Northfield
JAMES A. HONEIJ . . . . . Johannesburg, Transvaal

Physiology

RALPH W. E. COLE . . . . . Franklin Falls, N. H.
ELWIN H. WELLS . . . . . Rumney, N. H.
FRANK W. WHITE . . . . . Arlington
HOWARD A. LANPHER . . . . . Roxbury

Histology

FRANKLIN WELLES . . . . . Boston
MARION F. ALBRO . . . . . Providence, R. I.
WALTER H. YOUNG . . . . . East Dedham
SOLOMON H. RUBIN . . . . . Boston

General Chemistry

JOSEPH A. MEHAN . . . . . Lowell
ARDENNE A. STOTT . . . . . Reading
JOHN B. A. JOHNSON . . . . . Lowell
RAYMOND E. GATES . . . . . East Dedham
CHARLES A. DERBY . . . . . Boston

Medical Chemistry

MYRON W. MARR . . . . . Dorchester
ARTHUR T. GAGE . . . . . Winchester
CARL E. RICHARDSON . . . . . Marlboro, N. H.
EARLE D. SAWYER . . . . . Bridgeton, Me.

Pharmacology

WILLIAM J. BROWN . . . . . Boston
CHARLES SHAPIRO . . . . . Boston
DENNIS H. CARR . . . . . Boston
DOMIZIO A. COSTA . . . . . E. Boston
NATHAN ADDELSON . . . . . Boston

ALICE M. MOOAR . . . . . Hyde Park
Stenographer

MARY WRIGHT RICHARDSON . . . . . 11 Kenwood Road
Clerk of the Department of Clinical Dentistry

SARAH ELIZABETH MILLER . . . . . 7 Haviland St.
Clerk of the Department of Prosthodontia

FRANCES WILDER . . . . . 75 Rutland St.
Matron of the Department of Anaesthesia and Extraction

LILLIAN M. TATTAN . . . . . Somerville
Clerk to the Secretary

OTHER OFFICERS

HERBERT TRUE BROWN . . . . . Tufts College
Bursar

HARRY GRAY CHASE, B.S. . . . . 2 Curtis Ave.
Registrar

HELEN LOUISE MELLEN . . . . . 28 Professors Row
Librarian

ETHEL MUNROE HAYES, A.B. . . . . 252 Medford St.
Assistant Librarian

BLANCHE HEARD HOOPER, A.B. . . . . 124 Professors Row
Assistant Librarian

CHARLES BERNARD LEWIS . . . . . 11 Fairmount St.
Director of the Gymnasium

RICHARD CURTIS SMITH . . . . . Δ T House
Assistant in the Gymnasium

LEO OTIS COLBERT . . . . . 34 Union St., Charlestown
Assistant in the Gymnasium

NELLIE ALVIRA WRIGHT . . . . . 245 Medford St., Somerville
Assistant to the Secretary of the Faculty of Arts and Sciences

WILHEMINE HAZEL LANGDELL . . . . . 313 Salem St., Malden
Assistant in the College Office

FREDERICK A. BRUCE . . . . . 120 Curtis St.
Superintendent of Buildings

MRS. HARRIET ANNA TURNER
Matron of Metcalf Hall

MRS. ADELIA MORSE EDWARDS
Matron of Start House

Proctors

CHANDLER M. WOOD — PHILIP M. HAYDEN
EDWIN B. ROLLINS — HOWARD D. SMITH
CHESTER B. STORY

Russell Lecturer, 1906

ARTHUR WILDER GROSE, B.D., A.M. . . . . Rochester, N. Y.

BOARD OF EDITORS OF TUFTS COLLEGE STUDIES

THE PRESIDENT, *Ex-Officio*
Professor Wade, Professor Knight, Professor Dolbear, Professor Kingsley

CURATORS OF BUILDINGS

Chapel . . . . . Professor Lewis
Ballou Hall . . . . . Professor H. G. Chase
Barnum Museum . . . . . Professor Kingsley
Gymnasium . . . . . Mr. Lewis
Miner Hall . . . . . Dean Leonard
Library . . . . . Miss Mellen
Robinson Hall . . . . . Professor Hooper
Chemical Laboratory . . . . . Professor Michael
Bromfield-Pearson Building . . . . . Professor Anthony

Standing Committees

OF THE FACULTY OF ARTS AND SCIENCES *

ADMISSIONS: Professor. Denison, *Chairman;* Dean Anthony, Professor Evans.

ABSENCES AND PETITIONS: Dean Shipman, *Chairman;* Deans Leonard and Anthony; Sec'y H. G. Chase.

COMMON INTERESTS: Acting President Hamilton, *Chairman;* Dean Shipman, Professors Hooper, Kingsley, and Harmon.

COMMENCEMENT PARTS: The President, and Deans Shipman, Leonard, Anthony, and Kingsley.

SCHOLARSHIPS AND AIDS: Acting President Hamilton, *Chairman;* Deans Shipman, Anthony, and Leonard; Sec'y H. G. Chase.

LIBRARY: Dean Shipman, *Chairman;* Professors Hooper, Knight, Metcalf, and Wade.

PROGRAM: Professor Lewis, *Chairman;* Professors Anthony and Woodbridge, Assistant Professor H. G. Chase.

EXAMINATIONS: Professor Metcalf, *Chairman;* Professors Anthony and Denison.

CATALOGUE: Professor Maulsby, *Chairman;* Professor Anthony, and Dean Williams (of the Medical School).

BOOKS AND SUPPLIES: Professor Lewis, *Chairman;* Professors Durkee, Anthony, and Wren.

MEMBERS ON THE PART OF THE FACULTY OF ARTS AND SCIENCES OF THE BOARD OF DIRECTORS OF ATHLETICS: Professor Wren, *Chairman;* Professor Harmon and Mr. Lewis.

STUDENT ORGANIZATIONS: Professor Lewis, *Chairman;* Professors Knight, Denison, Hooper, and Mr. Lewis.

INFORMATION: Dean Anthony, *Chairman;* Dean Shipman, and Professor Denison.

USE OF COLLEGE BUILDINGS: Professor Hooper, *Chairman;* Professors Wren and Leonard, and Mr. Lewis.

* The Faculty of Arts and Sciences consists of the Faculties of the College of Letters, the Department of Engineering, the Graduate Department, and the Divinity School, constituting one body for the discharge of certain administrative functions.

THE
COLLEGE OF LETTERS

Faculty of the College of Letters

FREDERICK W. HAMILTON, A.M., D.D., ACTING PRESIDENT

WILLIAM R. SHIPMAN, A.M., D.D., LL.D., DEAN
Goldthwaite Professor of Rhetoric, and Professor of Logic

HARRY G. CHASE, B.S., SECRETARY
Assistant Professor of Physics

CHARLES H. LEONARD, A.M., D.D., LL.D.
Goddard Professor of Homiletics and Pastoral Theology

JEROME SCHNEIDER, PH.D.
Professor of Greek

EDWIN C. BOLLES, PH.D., D.D., LL.D.
Dickson Professor of English and American History

AMOS E. DOLBEAR, M.E., PH.D., LL.D.
Professor of Physics

GEORGE M. HARMON, A.M., D.D.
Professor of Biblical Theology

CHARLES E. FAY, A.M., LITT.D.
Wade Professor of Modern Languages

WILLIAM G. TOUSEY, A.M., D.D.
Ryder Professor of Ethics and the Philosophy of Theism

GEORGE T. KNIGHT, A.M., D.D.
Packard Professor of Christian Theology

WARREN S. WOODBRIDGE, A.M., D.D.
Woodbridge Professor of Applied Christianity

J. STERLING KINGSLEY, S.D.
Professor of Biology

ARTHUR MICHAEL, A.M., PH.D.
Professor of Chemistry

HERBERT E. CUSHMAN, B.D., A.M., PH.D.
Professor of Philosophy

LEO R. LEWIS, A.M.
Professor of the History and Theory of Music

DAVID L. MAULSBY, A.M.
Professor of English Literature and Oratory

FRANK W. DURKEE, A.M.
Professor of Inorganic Chemistry

WILLIAM K. DENISON, A.M.
Professor of the Latin Language and Literature

LAWRENCE B. EVANS, PH.D.
Professor of History

HENRY C. METCALF, A.B., PH.D.
Jackson Professor of Political Science

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

FRANK G. WREN, A.M.
Walker Professor of Mathematics

THOMAS WHITTEMORE, A.B.
Professor of English, and Instructor in the History of Art

WILLIAM R. RANSOM, A.M.
Assistant Professor of Mathematics

FRED D. LAMBERT, A.M., PH.D.
Assistant Professor of Biology

RALPH W. RICHARDS, A.M.
Instructor in Geology

WILLIAM H. REED, A.M.
Instructor in German

ARTHUR MURPHY JR., A.M.
Instructor in Chemistry

PHILIP M. HAYDEN, A.B.
Assistant in Latin

CHESTER B. STORY, A.B.
Assistant in English

CHANDLER M. WOOD, A.M.
Assistant in History

GEORGE EDWARD PEARSON, A.M.
Assistant in History

COMMITTEE ON PROMOTIONS

Dean Shipman, *Chairman;* Professors Woodbridge, Durkee, Lewis, and Denison.

COMMITTEE ON CURRICULUM

Dean Shipman, *Chairman:* Professors Maulsby, Wren, Denison, and Evans

Requirements for Admission

Candidates for the degree of Bachelor of Arts and of Bachelor of Divinity will be admitted to the College of Letters on passing an examination in two groups of subjects, known respectively as the Primary and the Secondary Group:—

The Primary Group *

Elementary English;
An Elementary Foreign Language, ancient or modern;
Elementary History;
Elementary Mathematics.

From a list of Secondary subjects, to each of which a number expressing its value in units is assigned, candidates shall submit in addition a selected group, aggregating *fourteen* units for the course in arts and *six* for each of the courses in science, subject only to the following limitations:—

1. The fourteen units for the course in arts shall include those representing one advanced ancient language.

2. No subject classified as "advanced" shall be offered without the corresponding elementary subject; nor shall any language subject be counted as "elementary" in both the Primary and the Secondary Group.

The Secondary subjects and their assigned units are as follows:—

The Secondary Group †

ELEMENTARY

Greek, 4	Physics, 1
Latin, 6	Botany, 1 or 2
French, 4	Zoology, 1 or 2
German, 4	Geology, 1 or 2
Chemistry, 1	Physiology, 1 or 2

* For detailed statement of the requirements in the Primary and the Secondary Group, see pages 46 to 57.

† Beginning with the college year 1906–07, entrance credit will be given in Music according to the plan recommended in the report of the New England Educational League, February 20, 1904. Copies of the recommendations may be had on application at the college office. Meanwhile, entrance credit will be given on examination in musical theory and practice, for work done during the high-school period, whether in or out of school.

The Secondary Group

ADVANCED

English, 2	Advanced Algebra, 1
Greek, 2	Trigonometry, 1
Latin, 2	Solid Geometry, 1
French, 2	Chemistry, 1
German, 2	Physics, 1
History, 2	

Candidates for admission to the Engineering Department must have received adequate preparation in certain required subjects, as follows:—

Engineering: the Primary Group

Elementary English;
* One Elementary Foreign Language;
Algebra;
Plane and Solid Geometry.

From the following list of Secondary subjects, to each of which a number expressing its value in units is assigned, candidates shall submit in addition a selected group aggregating three units:—

Engineering: the Secondary Group

Elementary History, 2	Mechanical Drawing, 1
Chemistry, 1 or 2	Freehand Drawing, 1
Physics, 1 or 2	Shop Work, 1

Detailed Information concerning the amount and character of the work demanded in preparation will be found on pages 46 to 57.

The Primary Group

I. Elementary English.†

1. *Reading and Practice.*—A certain number of books will be set for reading. The candidate will be required to present evidence of a general knowledge of the subject matter, and to answer simple questions on the lives of the authors. The form

* Students will find it an advantage to present both French and German. Preparatory work in Modern Languages above the elementary requirement may be counted toward the degree of B.S. in Engineering (see pages 51 to 53). But advanced credit for a language not continued in college, or credit for more than three years' work, will be given only on examination.

† No candidate will be accepted in English whose work is notably defective in point of spelling, punctuation, idiom, or division into paragraphs.

of examination will usually be the writing of a paragraph or two on each of several topics, to be chosen by the candidate from a considerable number—perhaps ten or fifteen—set before him in the examination paper. The treatment of these topics is designed to test the candidate's power of clear and accurate expression, and will call for only a general knowledge of the books. In place of a part or the whole of this test, the candidate may present an exercise book, properly certified by his instructor, containing compositions or other written work done in connection with the reading of the books.

The books set for this part of the examination will be:—

For 1906, 1907, 1908.—Shakespeare's Macbeth and the Merchant of Venice; the Sir Roger de Coverley Papers in The Spectator; Irving's Life of Goldsmith; Coleridge's The Ancient Mariner; Scott's Ivanhoe and The Lady of the Lake; Tennyson's The Passing of Arthur, and one of the three Idyls, Elaine, or Enid, or Gareth and Lynette; Lowell's The Vision of Sir Launfal; George Eliot's Silas Marner.

2. *Study and Practice.*—This part of the examination presupposes the more careful study of each of the works named below. The examination will be upon subject-matter, form, and structure; and will also test the candidate's ability to express his knowledge with clearness and accuracy. The books set for this part of the examination will be:—

For 1906, 1907, 1908.—Shakespeare's Julius Caesar; Milton's L'Allegro, Il Penseroso, Comus, and Lycidas; Burke's Speech on Conciliation with America; Macaulay's Essays on Milton and Addison; Lincoln's Gettysburg Address.

II. One of the following Languages:—

1. ELEMENTARY GERMAN.

The elementary examination will be adapted to the proficiency of those who have studied German in a systematic course of at least four periods a week for *two* years. It will consist of two parts, which may be taken separately:—

(*a*) The translation at sight of ordinary German. In prep-

aration for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least two hundred pages of classical and contemporary prose and verse, to be selected from such works as the following: Riel, *Kulturgeschichtliche Novellen;* Freytag, *Bilder aus der deutschen Vergangenheit,* especially *Aus dem Mittelalter* and *Aus dem Jahrhundert des groszen Krieges;* Kohlrausch, *Das Jahr* 1813; Schiller, *Der dreiszigjährige Krieg, Wilhelm Tell, Maria Stuart, Die Jungfrau von Orleans;* Goethe, *Hermann und Dorothea, Egmont, Iphigenie;* Lessing, *Minna von Barnhelm.* At least one-half of the amount read should be nineteenth-century prose. It is important that all the translation should be done into clear and idiomatic English.

(*b*) The translation into German of a passage of simple English prose.

A less extended knowledge of syntax than for advanced German (see the Secondary Group) will be presupposed in the selection of the matter for translation.

2. ELEMENTARY FRENCH.

The elementary examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *two* years. It will consist of two parts, which may be taken separately:—

(*a*) The translation at sight of ordinary French. The passages set for translation will be suited to candidates who have read not less than five hundred duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors. It is important that all the translation should be done into clear and idiomatic English.

(*b*) The translation into French of a passage of easy English.

A less extended knowledge of syntax than for Advanced French (see the Secondary Group) will be presupposed in the selection of matter for translation.

3. ELEMENTARY LATIN.

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for three years. It will consist of two parts:—

(*a*) The translation at sight of passages of Latin prose and verse. The passages must be rendered into simple and idiomatic English.

(*b*) A thorough examination on Cicero's Orations against Catiline, II, III, IV, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms. This test will consist in part in writing simple Latin prose, involving words, constructions, and idioms found in the prescribed speeches.

The reading in preparation for Elementary Latin should include Caesar's Gallic War (Books I—IV), Cicero's four orations against Catiline, two thousand or more lines of Vergil, or of Ovid and Vergil. Equivalents will be accepted, but prose must not be substituted for verse.

4. ELEMENTARY GREEK.

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course of at least five periods a week for two years. It will consist of two parts, which cannot be taken separately:—

(*a*) The translation at sight of passages of simple Attic prose.

(*b*) A thorough examination on Book II of Xenophon's Anabasis, directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms of the language.

Before taking the elementary examination the candidate should have read, in addition to the usual grammar work, at least four books of Xenophon's Anabasis, or an equivalent.

III. Elementary History.

Either 1 and 2, or 3 and 4, of the following:—

1. The history of Greece to the death of Alexander, with

due reference to Greek life, literature, and art, as treated in the histories of Botsford, Oman, West, or Myers.

2. The history of Rome to the accession of Commodus, with due reference to Roman literature and government. Such texts as those of Morey, Botsford, West, or Allen will indicate the character of the work desired.

While the periods indicated above will be accepted as satisfying the entrance requirements in ancient history, it is strongly recommended that the study of the history of Greece be continued to the conquest of Greece by Rome, and that the history of Rome be pursued to the fall of the Western Empire.

This does not necessarily imply any increase in the time devoted to Greek and Roman history.

3. The history of England, with due reference to social and political development. Larned's History of England and Montgomery's Leading Facts of English History will indicate the character of the work expected.

4. The history and government of the United States. Such texts as McLaughlin's History of the American Nation, Johnston's or Channing's History of the United States, and Evans's or Fiske's Civil Government should be used.

It is recommended that students seeking admission to the College should offer Greek and Roman history rather than English and American history.

The elementary requirement in history implies one year's work of not less than five periods a week. Work in the text book should be constantly accompanied by collateral reading. The attention of teachers is called to the Report of the Committee of Seven, published by the Macmillan Company, New York, under the title, "The Study of History in Schools".

IV. Elementary Mathematics.

A knowledge of the metric system, and ability to perform accurately the ordinary processes of arithmetic, are presumed. The examination will include:—

(*a*) Algebra, through quadratic equations in one and two unknown quantities, the progressions, ratio and proportion, and the binomial theorem for positive integral exponents; also

(*b*) Plane Geometry, including the solution of simple original exercises and numerical problems.

The Secondary Group *

The subjects and their values in entrance units are as follows:—

I. Advanced English. *Two entrance units.*

One of the following:—

1. A detailed study of a single period of English literature, and of not fewer than three authors belonging to it.

2. Old English (Anglo-Saxon): chiefly simple prose and grammar.

3. Chaucer: the Prologue, the Knightes Tale, and the Nonne Preestes Tale, including vocabulary, inflection, and prosody.

II. Elementary German. *Four entrance units.*

Primary Group, II, 1, when not offered in the Primary Group.

III. Elementary French. *Four entrance units.*

Primary Group, II, 2, when not offered in the Primary Group.

IV. Elementary Latin. *Six entrance units.*

Primary Group, II, 3, when not offered in the Primary Group.

V. Elementary Greek. *Four entrance units.*

Primary Group, II, 4, when not offered in the Primary Group.

VI. Advanced German. *Two entrance units.*

The advanced examination will be adapted to the proficiency

* For music as an additional subject, see note at bottom of page 45.

of those who have studied German in a systematic course of at least four periods a week for *three* years. It will consist of two parts, which may be taken separately:

(*a*) The translation at sight of standard German.

In preparation for this examination candidates will be expected to have read, in addition to not less than one hundred duodecimo pages of simple German, chiefly narrative prose, at least five hundred pages of classical and contemporary prose and verse, to be selected from such works as those enumerated in Primary Group, II, 1, Elementary German (*a*). At least one-half of the amount read should be nineteenth-century prose.

(*b*) The translation into German of a passage of easy English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, the elements of word-formation, and the principal uses of prepositions and conjunctions; the essentials of syntax, especially the uses of modal auxiliaries and the subjunctive and infinitive modes. Proficiency may also be tested by direct questioning.

It is recommended that the candidate acquire the ability to follow a recitation conducted in German and to answer in that language questions asked by the instructor.

VII. Advanced French. *Two entrance units.*

The advanced examination will be adapted to the proficiency of those who have studied French in a systematic course of at least four periods a week for *three* years. It will consist of two parts, which may be taken separately:—

(*a*) The translation at sight of standard French.

The passages set for translation will be suited to candidates who have read not less than one thousand duodecimo pages of classical and contemporary prose and verse, from the writings of at least five standard authors.

(*b*) The translation into French of a passage of English prose.

In preparation for this examination candidates will be expected to have acquired a thorough knowledge of accidence, and a familiarity with the essentials of French syntax, especially the uses of modes and tenses, and also with the commoner idiomatic phrases. Proficiency may also be tested by direct questioning.

Careful attention should be paid to pronunciation and to the use of spoken French, that the candidate may at least acquire the ability to follow a recitation conducted in the language and to answer questions asked by the instructor.

VIII. Advanced Latin. *Two entrance units.*

The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of at least five periods a week for four years. It will consist of two parts:—

(*a*) The translation at sight of passages of Latin prose and verse, with questions on the ordinary forms, constructions, and idioms, and on prosody. Simple and idiomatic English must be used in the translations.

(*b*) The translation into Latin prose of a passage of connected narrative.

The reading in preparation for advanced Latin should include Caesar's Gallic War (Books I—IV); Cicero, seven orations, or six if the Manilian Law be included; Vergil and Ovid, six to ten thousand lines, including the first six books of the Aeneid. Equivalents will be accepted, but prose must not be substituted for verse.

A more extended knowledge of grammar will be expected than in the case of Elementary Latin. Practice in reading at sight, and a general training in the proper methods of reading, should form an important part of the preparation, from the very first.

IX. Advanced Greek. *Two entrance units.*

The examination will be adapted to the proficiency of those who have studied Greek in a systematic course of five exercises a week, extending through at least three school years. The two parts of the examination may be taken separately:—

(*a*) The translation at sight of an average passage of Homer; with questions on ordinary forms, constructions, and idioms, and on prosody.

(*b*) The translation into Attic prose of a passage of connected English narrative. The passage set for translation will be based on some portion of the Greek prose works usually read in preparation for college.

Before taking the examination in Advanced Greek the candidate should have completed at least four books of Xenophon's Anabasis, or their equivalent in Attic prose, and six books in Homer's Iliad, or their equivalent in the Odyssey. It is recommended that Greek composition accompany all stages of the preparation, and that the pupil be practiced in reading Greek aloud from the beginning of his course.

X. Advanced History. *Two entrance units.*

One of the following:—

1. The History of Greece and Rome, as described on pages 49 and 50, for those only who have offered English and American History as primary subjects.

2. The History of England and the United States, as described on page 50, for those only who have offered Greek and Roman History as primary subjects.

3. The History of Europe, taking France or Germany as the central object of study, from the Germanic invasions to 1648.

4. Any one of the primary subjects not offered as such, combined with a detailed study of a limited period within that field.

Each of these subjects requires one year's study of not less than five recitation-periods a week. Equivalents for the subjects outlined above will be accepted.

XI. Advanced Mathematics.

1. Advanced Algebra, including the elementary treatment of permutations and combinations, the theory of logarithms, undetermined coefficients, the binomial theorem for fractional and negative exponents, determinants, and the elements of the theory of equations. *One entrance unit.*

2. Solid Geometry, including properties of straight lines and planes, diedral and polyhedral angles; of projections, of polyhedrons, including prisms, pyramids, and the regular solids; of cylinders, cones, and spheres; of spherical triangles, and the measurement of surfaces and solids. *One entrance unit.*

3. Plane Trigonometry, including the definition and relations of the six trigonometrical functions as ratios, proof of important formulae, theory of logarithms and use of tables, solution of right and oblique plane triangles. *One entrance unit.*

In Advanced Mathematics the school should insist upon the same amount of work and aim at the same standard of scholarship as the college requires in its courses in these subjects.

XII. Physics.

(*a*) ELEMENTARY. *One entrance unit.* The examination will be upon such elementary text-books as Gage's, Avery's, or Dolbear's, with emphasis upon Mechanics and Energy.

(*b*) ADVANCED. *Two entrance units.* In addition to (*a*), the candidate is required to present satisfactory evidence, by both certificate and record-book, of having completed a year's course of laboratory experiments in physics, of such grade as in Hall and Bergen's Text Book of Physics.

XIII. Chemistry.

(*a*) ELEMENTARY. *One entrance unit.* Preparation for this requirement presupposes a course in general inorganic chemistry (the non-metals) of not less than four periods a week for a year, in amount equal to that in An Introduction to the Study of Chemistry, by Ira Remsen, with experimental work in the non-metals equal in amount to that in Remsen's or Williams's Laboratory Manual. The experiments are to be performed by the students. It is well to present a certified laboratory notebook.

(*b*) ADVANCED. *Two entrance units.* The advanced requirement includes general inorganic chemistry, as in the elementary requirement, and in addition a course of not less than four periods a week for one year, devoted to the study of the metals. The amount must be equal to that in Remsen's text-book men-

tificates of the subjects in which they pass, such subjects to be credited to them when they appear for their final examinations.

For admission to advanced standing an examination must be well sustained both in the preparatory studies and in the studies in which the candidate desires credit for advanced standing.

Students entering on examination are required to register at the office of the Registrar before taking their examinations. Those entering on certificate are required to register before noon on the opening day of the College year.

A fee of five dollars must be paid in advance by every candidate who is examined at any other place than the College.

Admission by Certificate.—Certificates covering the preparatory work of candidates for admission are received in lieu of examination only from schools of New England that have been approved by the New England College Entrance Certificate Board. The institutions represented upon the board are Amherst College, Boston University, Bowdoin College, Brown University, Dartmouth College, Mount Holyoke College, Smith College, Tufts College, the University of Maine, Wellesley College, and Wesleyan University. Application for recognition upon the list of approved schools, when made to the Faculty of Tufts College, will be referred to the *Secretary of the Board, Professor N. F. Davis, 159 Brown St., Providence, R. I.*

Applications must be received before April first, in order that a school may be placed on the approved list for the next academic year.

Each certificate must cover a preparatory course of not less than four full years of school work, which must have been in approved schools, though not necessarily continuously in one school. It must contain complete answers to such questions as may be proposed by the several examiners.

Certificates should be in the hands of the Registrar of the College at least one month before the opening of the College year.

Blank forms for certificates will be sent upon request made to the *Registrar of the College, Tufts College, Massachusetts.*

Requirements for Degrees

Students may enter upon their work in the courses of Liberal Arts as candidates for the degree of Bachelor of Arts, or Bachelor of Science. In any case the ground of promotion and of graduation is the intellectual attainment of the individual student, not a fixed requirement of a certain number of years of study.

The plan of study offered to the student is at once liberal, controlled, and elastic. It combines the essentials of the general culture which is the prime object of the undergraduate college course with an opportunity for the development of the individual on the lines to which he is especially adapted, and for preparation looking to university and professional study. Students determine the general direction of their work by the choice of major department. They are thereby brought into personal advisory relations with their respective major instructors, under whose guidance they arrange their programs with reference to their individual needs and aims. All work actually accomplished by the student in regular standing counts toward the attainment of the degree. The period within which the degree may be attained depends upon the industry and ability of the individual student.

SYNOPSIS OF THE REQUIREMENTS FOR A.B.*

(1) The requirement for the degree of Bachelor of Arts is the satisfactory completion of subjects aggregating one hundred and twenty-eight term hours.

* Each department offers a series of subjects for study. The unit indicating the requirements is the *term hour*, which represents a subject pursued one hour a week for one half-year. Thus a subject calling for three hours a week for one term represents a requirement of three term hours; if it calls for three hours a week for one year, or two terms, the requirement in that subject is six term hours.

(2) The program of prescribed studies is as follows:—

	Term Hours
LANGUAGES (Latin, Greek, French, German, Hebrew: each student to take *three*)	18
ENGLISH	6
MATHEMATICS	6
PHYSICAL SCIENCE (Physics, Chemistry, Biology: each student to take *one or two*)	12
MENTAL AND MORAL SCIENCE* (each student to take *two*)	12
PHYSICAL TRAINING	2
A total of	56

The requirements are by groups, not by special subjects, and in each group except English and Physical Training some choice is allowed the student.

(3) The program of the student in the first year will be made up from the prescribed groups.

(4) At the end of the first year the student is required to choose a major department, in which he must complete, before graduation, work amounting to eighteen term hours. He may offer work already done in that subject in some one of the prescribed groups as a part of the eighteen hours which he is required to give to his major department, but no subject indicated in the catalogue as elementary can be counted in such work.

(5) The student shall further complete eighteen term hours in subjects designated as collateral with his major subject; that is, subjects tending to strengthen and assist his work in his major.

(6) The remaining term hours of the required aggregate are to be made up by the election of the student from the various subjects offered, limited only by special restrictions applied to certain subjects. The number of the remaining term hours is thirty-six, unless, as occasionally happens, the same work counts both as prescribed and as major work. In such case, the number of elective hours is proportionately increased.

* Of the three departments, Philosophy, Political Science, and History and Public Law the student must take work in at least two—six term hours in each.

(7) Upon the satisfactory completion of the aggregate requirement, the student is entitled to receive the Bachelor's degree, but no student shall be granted a degree in less than four years of residence, unless he shall have obtained grade B as an average for his entire work.

Summary

	TERM HOURS
Prescribed work	56
Major department	18
Collateral subjects	18
Elective *	36
	128

For B.S.

The requirement for the degree of Bachelor of Science is the satisfactory completion of one hundred and twenty-eight term hours, according to the program for the General Science Course, the Special Course in Chemistry, and the Medical Preparatory Course. The specialized character of these courses leaves only a small allowance of time outside the prescribed subjects for free election.

The requirements for the degree of Bachelor of Science in Engineering are given in connection with the detailed statement of the Department of Engineering.

* An acceptable Commencement part counts as an elective in the second half of the Senior year. See also the second half of paragraph (6), above.

(2) The program of prescribed studies is as follows:—

	Term Hours
LANGUAGES (Latin, Greek, French, German, Hebrew: each student to take *three*)	18
ENGLISH	6
MATHEMATICS	6
PHYSICAL SCIENCE (Physics, Chemistry, Biology: each student to take *one or two*)	12
MENTAL AND MORAL SCIENCE* (each student to take *two*)	12
PHYSICAL TRAINING	2
A total of	56

The requirements are by groups, not by special subjects, and in each group except English and Physical Training some choice is allowed the student.

(3) The program of the student in the first year will be made up from the prescribed groups.

(4) At the end of the first year the student is required to choose a major department, in which he must complete, before graduation, work amounting to eighteen term hours. He may offer work already done in that subject in some one of the prescribed groups as a part of the eighteen hours which he is required to give to his major department, but no subject indicated in the catalogue as elementary can be counted in such work.

(5) The student shall further complete eighteen term hours in subjects designated as collateral with his major subject; that is, subjects tending to strengthen and assist his work in his major.

(6) The remaining term hours of the required aggregate are to be made up by the election of the student from the various subjects offered, limited only by special restrictions applied to certain subjects. The number of the remaining term hours is thirty-six, unless, as occasionally happens, the same work counts both as prescribed and as major work. In such case, the number of elective hours is proportionately increased.

* Of the three departments, Philosophy, Political Science, and History and Public Law the student must take work in at least two—six term hours in each.

(7) Upon the satisfactory completion of the aggregate requirement, the student is entitled to receive the Bachelor's degree, but no student shall be granted a degree in less than four years of residence, unless he shall have obtained grade B as an average for his entire work.

Summary

	TERM HOURS
Prescribed work	56
Major department	18
Collateral subjects	18
Elective *	36
	128

For B.S.

The requirement for the degree of Bachelor of Science is the satisfactory completion of one hundred and twenty-eight term hours, according to the program for the General Science Course, the Special Course in Chemistry, and the Medical Preparatory Course. The specialized character of these courses leaves only a small allowance of time outside the prescribed subjects for free election.

The requirements for the degree of Bachelor of Science in Engineering are given in connection with the detailed statement of the Department of Engineering.

* An acceptable Commencement part counts as an elective in the second half of the Senior year. See also the second half of paragraph (6), above.

Departments of Instruction

MAJOR DEPARTMENTS

Any of the following may be chosen as major departments:

ENGLISH	POLITICAL SCIENCE
GERMAN	MATHEMATICS
FRENCH	PHYSICS
LATIN	CHEMISTRY
GREEK	BIOLOGY
PHILOSOPHY	ENGINEERING
HISTORY AND PUBLIC LAW	

In the subjoined statement of the subjects offered in the different departments, the name of the major instructor is that given at the head of each department that offers major work. In other cases the name is given of the instructor in general charge of the department. When two or more names appear, major students will be guided by the usage of the department. Names of instructors in charge of each subject are appended to the brief statement of the subject itself..

Subjects enclosed in brackets will not be given during the current year. In many cases alternates are indicated, which fill their places in the program for this year. The credit is in term hours equivalent to the number of program hours a week assigned to each subject, unless otherwise indicated. Subjects not described as half-yearly extend through both terms. Subjects that continue through only one half-year are indicated by letters in parenthesis following the proposed hour: thus (F) means "first half-year", (S) means "second half-year".

Subjects marked with an asterisk (*) will not be counted for honors. Subjects marked with a double asterisk (**) will be counted for honors only when special conditions are complied with.

A tabular view of the program of hours accompanies the subjoined statement of the several departments. No two subjects assigned to the same hour can be taken simultaneously by any student.

ENGLISH

PROFESSOR SHIPMAN, PROFESSOR MAULSBY, AND PROFESSOR WHITTEMORE

The work of the department of English includes the theory and practice of composition and the study of literature.

English is required for one year or six term hours. In the first half of the first year the purpose of the instruction in composition is to aid the student to write with clearness and correctness. The aim is also to teach the other fundamentals of rhetoric. In the second half-year the general subject of expression is considered, with special reference to English composition.

In the study of literature, intelligent appreciation of the author's thought and of his characteristic mode of expression is the immediate result held in view. Biographical and philological details, the effect of environment, and the mass of published criticism that clusters about the great names are not neglected, although given a subordinate place. The method at first pursued demands attentive reading of more than can be considered in the class-room, frequent written expression of literary judgment, and occasional investigation of topics not otherwise treated. The library contains multiple copies of many of the authors read. Whether or not the period studied makes special study of linguistic forms necessary, in all subjects the thought-content is regarded as of prime importance. In literary subjects, composition is required as an essential part of the work.

SUBJECTS

*1. The Theory and Practice of Composition. Lectures, themes, conferences. *Tu., Th., Sat., 10.45.* (F)

PROFESSOR MAULSBY AND MR. STORY

*2. A Study of Expression. Lectures, readings, themes, conferences. *Tu., Th., Sat., 10.45.* (S)

PROFESSOR WHITTEMORE AND MR. STORY

*8. The Theory and Practice of Composition. Text-book, themes, conferences. *Three hours, to be arranged.* (F) PROFESSOR SHIPMAN

English 8 is designed for students who fail to do satisfactory work in English 1 and 2.

*5. Argumentative Composition, a study of its requirements as observed by successful writers, with constant practice by the student. *Tu., Th., 3.00.* (F) *Counting as three hours.* PROFESSOR SHIPMAN

7. English Versification. Study of poetic forms and practice in poetic composition. *Tu., Th., Sat., 10.45.* (S) PROFESSOR MAULSBY

[10. The English Bible. *Mon., Wed., Fri., 11.45.* PROFESSOR WHITTEMORE]

[*11. General View of English Literature. The study of representative masterpieces. Lectures, text-book, required reading, papers. *Tu., Th., Sat., 8.45.* PROFESSOR MAULSBY]

English 11 is designed as an introduction to the study of special periods. It is intended primarily for Freshmen and Sophomores. Although not counted for honors, it is required of students making English their major subject.

**12. American Literature. Lectures, required reading, special topics, essays. *Mon., Wed., Fri., 2.00.* PROFESSOR MAULSBY

[13. The English Romantic Movement in Poetry. Lectures, reading, brief critical essays. *Tu., Th., Sat., 8.45.* (F) PROFESSOR MAULSBY]

14. Poets of the Victorian Era, chiefly Tennyson and Browning. Lectures, reading, brief critical essays. *Tu., Th., Sat., 8.45.* (F) PROFESSOR WHITTEMORE

[15. Prose of the Nineteenth Century. Lectures, reading, brief critical essays. *Mon., Wed., Fri., 11.45.* PROFESSOR WHITTEMORE]

16. Milton and his Time. Lectures, readings, brief critical essays. *Tu., Th., Sat., 10.45.* (F) PROFESSOR WHITTEMORE

[17. Shakespeare. Reading of selected plays, lectures, quizzes. *Mon., Wed., Fri., 8.45.* (F) PROFESSOR MAULSBY]

[18. Shakespeare. Reading of selected plays, lectures, brief critical essays. *Mon., Wed., Fri., 8.45.* (S) PROFESSOR WHITTEMORE]

English 17 should precede English 18.

[19. Chaucer and his Contemporaries. Study of forms and pronunciation, reading of selections from the Canterbury Tales and the minor poems. During the year, the reading will include selections from various writers of the fourteenth century. *Mon., Wed., Fri., 10.45.* PROFESSOR MAULSBY]

[**20. Anglo-Saxon. Study of the grammar, and the reading of prose selections, during the first half-year. During the second half-year, Beowulf will be read. *Mon., Wed., Fri., 10.45.* PROFESSOR MAULSBY]

English 20 may be dropped at the end of the first half-year.

23. The Short Story. Examples, and composition. *First half-year. Counting as three hours.* PROFESSOR WHITTEMORE

25. Development of the English Drama. Besides following in outline the course of the English drama from its beginning to the present, a special point will be made of reading the whole of Shakespeare. *Mon., Wed., Fri., 9.45.* PROFESSOR MAULSBY

[26. Development of the English Novel, in the eighteenth and nineteenth centuries. *Mon., Wed., Fri., 9.45.* PROFESSOR MAULSBY]

27. Homiletics. The Idea and Structure of the Sermon. Homiletic analysis of texts taken from the Bible; study of the sermons of eminent preachers with respect to literary form, expression, and range of illustration. Helps to sermon preparation from studies in character and literature. *Tu., Th., Sat., 11.45.* PROFESSOR LEONARD

28. Seminary in Emerson. *Counting as six term hours for the year. Hours to be arranged.* PROFESSOR MAULSBY

English 28 is open only to advanced students of English.

ORATORY

PROFESSOR MAULSBY AND MR. STORY.

It is intended that the study of oratory shall be of practical benefit to the general student, whether or not he looks to professional pursuit of the art. Exercises are practiced in correct breathing, the production of tone, and in gesture; moreover, individual faults are pointed out and remedies suggested. The work in Oratory 1 aims at securing reading that shall be intelligent, natural, and forcible. In this subject the principles that underlie all successful public speaking are indicated, and, so far as possible, these principles are applied in practice. In the advanced subjects opportunity is offered for carrying farther the reading of literature, or of preparing and delivering original speeches. In connection with oratory as a means of persuasion it is urged that students take related subjects in English composition, as English 5. In all classes, frequent individual conferences are held, as an essential part of the work.

1. Study of the voice; enunciation and pronunciation; attitude and gesture. *Tu. or Th., 2.00.* PROFESSOR MAULSBY AND MR. STORY

2. Reading of standard prose and verse. *One hour a week, to be arranged.* PROFESSOR MAULSBY AND MR. STORY

3. Reading of oratorical selections. The preparation and delivery of original speeches. *One hour a week, to be arranged.* PROFESSOR MAULSBY AND MR. STORY

4. Extemporaneous speaking. The principles of debate. *One hour a week, to be arranged.* PROFESSOR MAULSBY AND MR. STORY

[7. The History of Oratory. Lectures, occasional papers, and prescribed reading. *Tu., Th., 3.00.* (S) PROFESSOR MAULSBY]

The purpose of Oratory 7 is to furnish, by a review of the work of the great orators, both incentive and knowledge to those interested in public speaking.

GERMAN

PROFESSOR FAY

The aim of the department is twofold, according as the student has entered with the elementary or the advanced requirement. In the former case it is to lead him in the briefest possible time to such a mastery of the language as will enable him to use it as a source of information and medium of literary culture; where this preliminary work has already been done, to afford this literary culture itself, together with such historical and linguistic knowledge as may properly accompany advanced work in a literary department. Hence, in the elementary subjects, facility and accuracy of translation are sought by means of copious reading and careful grammatical drill; in the intermediate year the classic masterpieces are read for their own sake, together with such historical material as will throw light upon the epoch in which they were written or with which they deal; in the advanced work the systematic study of the history of the literature is undertaken, and opportunity is afforded for acquiring a knowledge of the earlier literary forms. Composition forms an important element in the instruction. Though no attempt is made to teach the student to speak the language, he is trained from the outset to hear it and to understand it when spoken, chiefly for the sake of the reflex influence of such practice upon pronunciation.

Six consecutive subjects are offered. While it is not impossible to take them all within the four college years, the scheme is based upon the supposition that the earlier subjects will have been taken in the preparatory school.

SUBJECTS

*1. Elementary German. The essentials of grammar; a German reader; reading of modern prose; dictation and composition. *Mon., Wed., Fri.*, 9.45. MR. REED

German 1 is the equivalent of the entrance requirement in Elementary German, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Review of grammatical principles, especially with reference to syntax. Reading of works by modern authors, such as Arnold, Aprilwetter; Baumbach, Der Schwiegersohn; Riehl, Burg Neideck; Scheffel, Der Trompeter von Säkkingen. Dictation and composition. *Mon., Wed., Fri.*, 8.45. MR. REED

German 2, when taken by entering students, presupposes two years' study of the language in the preparatory school. It is possible for a student who has done with distinction the work of German 1, and who shall do a prescribed amount of outside reading, to omit this subject and enter German 3.

**3. First half-year: the rapid reading of modern prose; contemporary authors. Second half-year: introduction to the classic authors: Lessing, Minna von Barnhelm; Schiller, Die Jungfrau von Orleans; Goethe, Hermann und Dorothea. *Tu., Th., Sat.*, 8.45. PROFESSOR FAY

For entering students German 3 presupposes three years of preparatory study. Either half-year may be counted as a half-subject.

**3B. German Composition. Von Jagemann's German Prose Composition. Kron's German Daily Life. Practice in conversation and in original composition. *Tu., Th.*, 9.45. MR. REED

German 3B is offered to students who are taking or have previously taken German 3 or its equivalent.

4. Schiller and Goethe. Maria Stuart; Wallenstein; Die Braut von Messina; Egmont; Die italienische Reise; Lyrics. Collateral reading. Dictation. *Tu., Th., Sat.*, 11.45. MR. REED

German 4 is open to entering students who have had four years of preparatory study, or who, having passed with distinction the entrance examination in Advanced German, also pass with credit a special examination in

advanced grammar and sight translation. Juniors and Seniors whose major department is German may be permitted to take 4 and 5 in the same year.

5. Advanced reading in Lessing and Goethe. Nathan der Weise, Emilia Galotti, Laokoon; Tasso, Iphigenie, Faust, Parts I and II, with collateral reading. *Mon., Wed., Fri., 10.45.* PROFESSOR FAY

6. History of German Literature, with illustrative works for leading epochs. Middle High German: Bachmann, Mittelhochdeutsches Lesebuch. *Mon., Wed., Fri., 8.45.* PROFESSOR FAY

FRENCH

PROFESSOR FAY AND PROFESSOR LEWIS

The plan and scope of the department are, in general, the same as those of the department of German, to the statement of which the student is referred. Six consecutive subjects are offered.

SUBJECTS

*1. Elementary French. The essentials of grammar, with composition; Grandgent's Grammar; a French reader; reading of short works of modern authors in prose and verse. *Mon., Wed., Fri., 9.45.* PROFESSOR LEWIS.

French 1 is the equivalent of the entrance requirement in Elementary French, and should be taken in the Freshman year by all who enter with a condition in that subject.

*2. Review of grammatical principles, especially with reference to syntax; exercise in composition; vocabulary practice; reading of modern fiction and drama, such as Merimée's Colomba and Sandeau's Mademoiselle de la Seiglière. *Mon., Wed., Fri., 8.45.* PROFESSOR LEWIS

French 2, when taken by entering students, presupposes two years' study of the language.

**3. Reading of modern authors (Thiers, Taine, de Vigny); introduction to seventeenth-century classics (Corneille, Racine, Molière). Review of grammatical principles, with advanced vocabulary practice. *Tu., Th., Sat., 8.45.* PROFESSOR LEWIS

For entering students French 3 presupposes three years of preparatory study. Either half-year may count as a half-subject.

**3B. French Composition. Plœtz, Nouvelle grammaire française and Cours gradué de thèmes; Chardenal's Advanced Exercises; brief essays and dictation. *Tu., Th., 9.45.* PROFESSOR FAY

French 3B is offered to students who have satisfactorily completed French 2 or its equivalent. It is desirable that at least one course in German should have been taken.

4. Literature and Manners of the Seventeenth Century. Crane's Société française au XVIIe Siècle; Molière, Les Précieuses Ridicules, Les Femmes Savantes; Boileau, Les Héros de Roman; Madame de Sévigné; Warren's French Prose of the XVIIth Century; collateral reading from modern critics. *Mon., Wed., Fri., 2.00.* PROFESSOR FAY

French 4 is open to entering students who have had four years of preparatory study of the language, or who, having passed with distinction the entrance examination in Advanced French, also pass with credit a special examination in advanced grammar, composition, and sight translation. Juniors and Seniors whose major department is French may be permitted to take 4 and 5 in the same year.

5. Literature of the Eighteenth and Nineteenth Centuries. First half-year: the drama, poetry, the novel, the philosophical essay, and criticism. Second half-year: introduction to the history of French literature, presented by lectures and collateral reading. *Mon., Wed., Fri., 3.00.* PROFESSOR LEWIS

Either half-year may count as a half-subject.

6. A systematic study of French literature from the earliest times to the middle of the nineteenth century. The manuals of Petit de Julleville and Brunetière will be read, together with illustrative texts for the several epochs, from which some period will be chosen for more detailed study. *Mon., Wed., Fri., 9.45.* PROFESSOR FAY

ITALIAN

PROFESSOR FAY

The work offered in Italian is open to those only who have had two years of college study in French, or its equivalent. With such previous training, the student is able to acquire with rapidity a reading knowledge of the language, and thus to become acquainted within the year with characteristics of contemporary and classic literature. This subject is presented in alternate years.

SUBJECT

[1. Grandgent's Grammar and Composition; Bowen's Reader; Maffei, Merope; Dante, Divina Commedia (Scartazzini's edition). *Tu., Th., Sat., 10.45.* PROFESSOR FAY]

LATIN

PROFESSOR DENISON

The aim of the department of Latin is to lead students to a thorough appreciation of a language and people that have had

profound influence on modern life and literature. The department offers a wide range of reading, which should impart to the faithful student not merely a greater accuracy, a greater power to make fine distinctions and observe small details, but also a broader general culture. Considerable time is devoted to reading at sight. The attention of students is directed constantly to the history, archaeology, art, public and private life, and religion of the Roman people, as well as to the formation and structure of their language and its relation to other languages. Due emphasis is laid on the connection between ancient and modern life and thought. The various reading courses are supplemented with lectures on appropriate topics, and are illustrated from time to time with the stereopticon. Latin 1, 2, either 3 or 4, and three composition courses are offered every year, and a number of other subjects, such as Latin 8, 9, and 10, are given, with due announcement, at regular but longer intervals. Courses 3, 4, 7, and all designated by numbers above 7, as well as all subjects in Classical Archaeology, are suitable for graduate students.

SUBJECTS

*1. Cicero, De Senectute, or De Amicitia; Vergil, Eclogues; selections from Latin poets; Livy, Books I and II, or XXI and XXII; reading at sight; lectures on suitable topics. *Tu., Th., Sat.: Division (a), 8.45; Division (b), 9.45.* PROFESSOR DENISON

Latin 1 is introductory to all later subjects. Latin 5 is designed primarily for students of Latin 1 who wish for work in composition.

2. Pliny, selected letters; Petronius, Cena Trimalchionis; Horace, Odes and Epodes; Tacitus, Germania or Agricola; reading at sight; lectures on suitable topics. *Mon., Wed., Fri., 3.00.* PROFESSOR DENISON

Latin 2 is open to students who have completed Latin 1.

[3. Juvenal, principal Satires; Martial, selected Epigrams; Suetonius, selections; Tacitus, selections from the Annals; reading at sight. These authors will be studied with special reference to the information they afford concerning the history and life of the early empire. *Mon., Wed., Fri., 11.45.* PROFESSOR DENISON]

4. Horace, Satires and Epistles; Plautus, one or two plays; Cicero, selected letters; reading at sight. *Mon., Wed., Fri., 11.45.* PROFESSOR DENISON.

Subjects 3 and 4 will be given in alternate years, and are designed for those who have completed Latin 2, or its equivalent. They may, by

special arrangement with the instructor, be taken as half-subjects in either half-year.

*5. Latin Composition: translation of English narrative, based in part on the prose authors read in Latin 1, with which it may be taken most profitably. *Tu.*, *2.00.* PROFESSOR DENISON

6. Latin Composition. Latin 6 is open only to students who have completed Latin 5. In it particular attention is paid to idiom. By reason of the variation of the work from year to year, the course may be taken a second time with due credit. *Th.*, *2.00.* PROFESSOR DENISON

7. Latin Composition. Original essays in Latin. Study of selections of prose as models. Reading at sight. *One hour a week.* PROFESSOR DENISON

NOTE:—No student can be recommended as a teacher of Latin who has not taken at least one course in Latin composition.

[8. Latin Hymns; Cicero, Tusculan Disputations, Book I, and Dream of Scipio. *Three hours a week.* (F) PROFESSOR DENISON]

[9. Catullus and the Elegiac Poets, Tibullus, Propertius, and Ovid. *Three hours a week.* (S) PROFESSOR DENISON]

10. Lucretius, selections; Vergil, Georgics; Seneca, Medea. *Three hours a week.* (S) PROFESSOR DENISON

Latin 8, 9, and 10 are half-subjects, and are given, one each year, in regular rotation. They are open to students who have completed Latin 1, but are intended to be a supplement, not a substitute, for 2, 3, and 4. Those who wish to widen the range of their Latin reading will find these subjects suited to that end. The authors selected will be studied mainly from a literary point of view.

NOTE:—The attention of Greek and Latin students is called to related subjects listed under Classical Archaeology, pages 74 and 75.

GREEK

PROFESSOR SCHNEIDER AND PROFESSOR WADE

The aim of the department is to treat the Greek language not merely as a disciplinary instrument, but as a factor in the broadest and most liberal culture. Throughout the course the practice of reading at sight is encouraged, and especial effort is made to develop such facility that the student may resort with pleasure to the masterpieces of the Greek language, and find in them the delights and inspirations of a noble literature.

To this end also considerable attention is paid to the style and literary characteristics of the authors read. The relations of Greek to the Latin, German, and English languages are dis-

cussed, and the course is shaped to develop, discipline, and enrich the linguistic resources of the student. Reading without translation is encouraged from the beginning. Incidentally, studies are made of the customs and daily life of the people. Discussion relative to the laws, philosophy, and religion of the Greeks is introduced, and some attempt is made to exhibit the indebtedness of modern civilization to Hellenism.

SUBJECTS

*1. Elementary. Goodwin's Grammar; Xenophon, Anabasis; Homer. *Double subject. Daily: Mon., Wed., Fri., 11.45; Tu., Th., Sat., 9.45.*

PROFESSOR WADE

Greek 1 is intended for students entering without Greek and wishing to begin the study of that language. It is assumed that their previous training in linguistic studies will enable them to proceed rapidly and accomplish in one year all the work usually done in preparation for college. This subject may be taken (without credit) as a normal course by advanced students, on consultation with the instructor.

**2. Xenophon, Symposium; Plato, Apology; Homer; Euripides, one play. *Mon., Wed., Fri., 2.00.* PROFESSOR WADE

Greek 2 is for students who have passed Greek 1, or the entrance requirements in Greek.

3. Herodotus, Book VIII; Plutarch, Life of Themistocles; Thucydides, portions of Book I; Aeschylus, the Persians; Sophocles, Antigone; Euripides, Alcestis. *Tu., Th., Sat., 11.45.* PROFESSOR WADE

4. Theocritus, Idylls and Epigrams; Pindar, Olympian and Pythian Odes; Tyler's Selections from Greek Lyrics; reading at sight in the Odyssey. *Tu., Th., Sat., 8.45.* PROFESSOR SCHNEIDER

Greek 4 is open to those who have completed Greek 3. Much attention is paid to the development of Greek lyric poetry, and the various theories of rhythm and metre are discussed. Lectures on appropriate topics are given in connection with the work.

5. Plato, Symposium; Aristotle, Ethics, Books I-IV, or Politics; reading at sight in Herodotus and Lucian. *Tu., Th., Sat., 9.45.*

PROFESSOR SCHNEIDER

Greek 5 is open to those who have completed Greek 4. A critical study of the authors read is supplemented with a general survey of Greek philosophy.

**6. Greek Composition; practice in sight reading. *One hour a week.*

PROFESSOR WADE

Greek 6 may be taken by anyone who has had the equivalent of Greek 1. It is especially recommended to Freshmen intending to pursue the study of Greek beyond the Freshman year.

7. Greek Composition; reading at sight. *One hour a week.*
PROFESSOR WADE

Greek 7 is open only to students who have completed Greek 6.

NOTE:—No student can be recommended as a teacher of Greek who has not taken at least one course in Greek composition.

8. Elegiac and Lyric Poets. Lectures and reading. *Three hours a week.* (S) PROFESSOR WADE

Greek 8 is open to students who have completed Greek 2.

[9. Orators: Jebb, Selections from the Attic Orators; Lysias; Demosthenes. Reading and lectures. *Three hours a week.* (S)
PROFESSOR WADE]

Greek 9 is open to students who have completed Greek 2.

[10. The Greek Drama in Translation. Lectures on the origin and development of the Greek drama. Reading, and essays. *Three hours a week.* (S) PROFESSOR WADE]

Greek 10 is intended primarily to give students who have entered college without Greek some knowledge of the masterpieces of the Greek drama. The subject is open to members of the three upper classes.

11. Advanced subject, for the degree of Master of Arts. Work will be arranged on consultation with the instructor, to suit the needs of the student. PROFESSOR WADE

CLASSICAL ARCHAEOLOGY

Under Classical Archaeology are grouped subjects of the Greek and Latin departments which deal, to a large measure in lecture form, with the art, life (both public and private), and religion of the ancient Greeks and Romans. The work will consist of lectures, collateral reading and investigation, and papers. There will be illustration, wherever possible, with photographs, stereopticon, and specimens. The following subjects are intended to supplement the reading of classical authors, which naturally forms the basis of serious study in Classical Archaeology. It is intended to give two subjects each year, as follows:—

SUBJECTS

[1. Greek, Roman, and Etruscan Architecture. *Mon., Wed., Fri.*, 9.45. (F) PROFESSOR DENISON]

[2. Greek and Roman Sculpture. *Mon., Wed., Fri.*, 9.45. (S)
PROFESSOR WADE]

Classical Archaeology 1 and 2 will be given in 1907-1908.

3. Roman Private Life. *Mon., Wed., Fri.*, 9.45. (F) PROFESSOR DENISON

[4. Greek Private Life. *Mon., Wed., Fri., 9.45.* (F) PROFESSOR WADE]

In subjects 3 and 4 there will be systematic treatment of such topics as the customs pertaining to birth, education, marriage, death, the house, furniture, dress, meals, amusements.

[5. Roman Public Life. *Mon., Wed., Fri., 9.45.* (S)
PROFESSOR DENISON]

Classical Archaeology 4 and 5 will be given in 1906–1907.

6. Greek Public Life. *Mon., Wed., Fri., 9.45.* (S)
PROFESSOR WADE

In subjects 5 and 6 there will be systematic study of such topics as the geography and topography of the ancient world, commerce and navigation, political, legal, and military institutions, measures and money, books, inscriptions, religion and festivals, chronology and calendar.

HEBREW

PROFESSOR WOODBRIDGE

Hebrew is offered as a foundation for the critical study of Old Testament literature, and of a more intimate understanding of Hebrew thought and life.

SUBJECTS

1. The Elements of Grammar; translation of portions of Genesis, of the Book of Ruth, and of other selections. *Tu., Th., Sat., 11.45.*
PROFESSOR WOODBRIDGE

2. Syntax; critical reading from the Historical Books, from the Prophets, and from the Psalms. *Three hours a week.*
PROFESSOR WOODBRIDGE

PHILOSOPHY*

PROFESSOR CUSHMAN, PROFESSOR SHIPMAN, PROFESSOR TOUSEY, AND PROFESSOR DOLBEAR

The department offers work in all the traditional branches of philosophy, adapted to the needs of many kinds of students. To the specialist in science it affords a comprehensive view of the sciences from the point of view of metaphysics. To the student seeking general culture it affords the liberalizing study of the history of philosophy. To the student of mathematics it commends logic as a necessary supplement to his work. To the specialist in philosophy it will give work as far as an undergraduate should go. The beginner has open to him the choice of

* The departments of Philosophy, History and Public Law, and Political Science constitute the group of Mental and Moral Science, in which twelve term-hours of work are required for the degree of A.B. (See page 60.)

two subjects: logic, and the history of philosophy. If he chooses to begin with logic, the work in advanced logic and in ethics is open to him. In all cases where there is opportunity it is advised that the student begin with the history of philosophy. To follow this natural course makes of philosophy an inductive science. The other subjects may then follow at the student's option, or as his specific needs seem to demand. Students choosing philosophy as their major department will be expected to take at least three term hours each in the history of philosophy, logic, and psychology, and to make up three years of continuous work. The department is open to all except Freshmen and first-year Special students. The Philosophical Conference holds public meetings during the year. It gives the opportunity to the students of discussing philosophical subjects collateral with the regular work, and often invites eminent persons to address it on special topics.

INTRODUCTORY SUBJECTS

1. History of Ancient Philosophy: the religious period of ancient thought, the pre-Socratic Greeks, the Greek Enlightenment, Plato and Aristotle; the Hellenic-Roman thought, including Stoicism, Epicureanism, neo-Platonism, and early Christianity. Lectures, and text-book: Windelband's History of Ancient Philosophy. *Tu., Th., Sat., 9.45.* (F)

PROFESSOR CUSHMAN

[2. History of Modern Philosophy: the beginnings of modern thought in the middle ages, the Renaissance (1500-1688), the modern Enlightenment (1689-1781), German philosophy from Kant to Hegel (1781-1820), modern Evolution theories. Lectures and text-book. *Tu., Th., Sat., 9.45.* (F) PROFESSOR CUSHMAN]

Philosophy 1 and Philosophy 2 are given at the same hour in alternate years.

3. Logic, especially Deductive, with an elementary consideration of fallacies. *Tu., Th., Sat., 10.45.* (F) PROFESSOR SHIPMAN

ADVANCED SUBJECTS

4. Logic (advanced), especially Inductive. *Tu., Th., Sat., 10.45.* (S)

PROFESSOR SHIPMAN

Much attention is paid to practical exercises. Philosophy 4 is open to those students who have completed Philosophy 3 with distinction. In it fallacies are discussed at much greater length, and recent modifications of logical doctrine are examined.

**5. Psychology. Lectures and illustrative experiments. The phenomena of consciousness are studied with reference to the physiology of the nervous system, including the brain, eye, ear, skin, nose, and mouth. The elements of consciousness, social psychology. *Tu., Th., Sat., 9.45.* (S)

PROFESSOR CUSHMAN

Philosophy 5 must be preceded by Philosophy 1, 2, or 3.

6. Ethics, Theory of. The moral nature; springs of conduct; moral judgments; theories of the moral standard, particularly sentimentalism, hedonism, rigorism, eudæmonism; moral volition, with critical examination of determinism; the moral ideal. Text-books, lectures, assigned reading, themes. *Mon., Wed., Fri., 10.45.* (F) PROFESSOR TOUSEY

Philosophy 6 must be preceded by Philosophy 1, 2, or 3.

7. Ethics, Applied. Bearing of moral theory on the problems of (*a*) the individual life, (*b*) the social life. Special consideration of duties, rights, temperance, charities, moral pathology, penology. Text-books, lectures, prescribed reading, and theses. *Mon., Wed., Fri., 10.45.* (S)

PROFESSOR TOUSEY

Philosophy 7 must be preceded by Philosophy 6.

8. Ethics, Historical and Critical. History of ethical speculation; development of moral customs and ideals. Text-books, lectures, prescribed studies in the classics of ethical literature, and theses. *Tu., Th., Sat., 10.45.* (S) PROFESSOR TOUSEY

Philosophy 8 must be preceded by Philosophy 6.

9. Metaphysics: the Theory of Reality, including a review and criticism of the common theories of life, such as materialism, realism, theism, mysticism, idealism, and the fundamental problems involved. Lectures, theses, text-book. *Mon., Wed., Fri., 10.45.* PROFESSOR CUSHMAN

The problems discussed are those fundamental to science, ethics, aesthetics, and logic, considered from the point of view of metaphysics. Among these are the questions of teleology, consciousness and self-consciousness, personality, immortality, freedom and necessity, causation, nature, evil, beauty.

10. Aesthetics: the theory of beauty, and the philosophy of art; historical review of aesthetic theories. Lectures and theses, collateral reading. *Mon., Wed., Fri., 9.45.* (F) PROFESSOR CUSHMAN

[11. English Philosophy from Hobbes to Hume. The historical development of the English school of thought until Hume, with a critical and expository reading of the works of Hobbes, Locke, Berkeley, and Hume, together with a survey of contemporaneous and other political theories, such as those of Spinoza, Hooker, Rousseau, and Grotius. *Mon., Wed., Fri., 9.45.* (S) PROFESSOR CUSHMAN]

Philosophy 11 will be given in 1907-1908.

12. The Philosophy of Kant. A careful critical and expository reading of the Critiques of the Pure Reason, the Practical Reason, and the Judgment, in Watson's translation. The historical position of Kant with reference to his predecessors and to his influence upon modern thought. Lectures, prescribed reading. *Mon., Wed., Fri., 9.45.* (s) PROFESSOR CUSHMAN

[13. Descartes, Spinoza, and Leibnitz, their historical development and doctrines, with a critical and expository reading of their works. Lectures and prescribed reading. *Mon., Wed., Fri., 9.45* (s) PROFESSOR CUSHMAN]
Philosophy 13 will be given in 1906-1907.

14. Spencer's First Principles. *Three hours, to be arranged.* (s)
PROFESSOR DOLBEAR

15. The Philosophy of Theism. The Final Problem; Limits of the Intelligence; Theistic Arguments; Final Cause in Nature; Anti-Theistic Theories. *Mon., Wed., Fri., 11.45.* PROFESSOR TOUSEY

16. The Philosophy of Religion, historical, critical, and constructive. Topical reports by the class, and lectures. *Tu., Th., Sat., 11.45.*
PROFESSOR KNIGHT

PEDAGOGICS

SUBJECT

[1. The Theory and Practice of Teaching. The ethical and psychological principles involved in teaching, important modern theories, supplementary lectures on practical methods. *Tu., Th., Sat., 11.45.* (s)
PROFESSOR CUSHMAN ASSISTED BY TEACHERS FROM LEADING SECONDARY SCHOOLS]

HISTORY AND PUBLIC LAW*

PROFESSOR EVANS AND PROFESSOR BOLLES

The department aims to develop the idea of unity in the history of mankind, and to make the study of all history of practical value through its relation to present-day problems and conditions. To this end the approach is made through subjects intended to give a thorough scientific knowledge of essential facts, and so arranged as to show these facts in their proper relations. History 1 and 2 are the introductory subjects by which the student is prepared for more detailed work. History 3 is devoted to the history of the United States. The subjects numbered from 4 to 7 offer to properly qualified students op-

* See note, page 75.

portunity to make a more detailed study of limited periods in the history of Europe and America. These subjects are arranged in two series, which alternate with each other from year to year, and thus cover a considerable range. Subjects 11 to 14 relate to church history and the comparative history of religions. History 15 is devoted to research.

Students expecting to make History their principal study are urged to devote considerable time in their first and second years to the study of modern languages. In History 5, 6, and 7 a reading knowledge of French will be assumed.

In the division of Public Law and Administration the object is to furnish such general knowledge of political institutions and their working as is needed by every intelligent citizen, and also to assist those who expect to enter the legal profession or the government service. The study of law and government is closely related to the study of history, and hence one year of history is required for admission to the work in Public Law. The work in this group begins with a study of the political institutions of the United States, which is followed by more advanced subjects dealing with the institutions of our own and other countries, as well as by subjects treating international relations, the history and principles of jurisprudence, and public administration. A knowledge of French is desirable, and in some cases indispensable. As far as possible the subjects should be taken in the order of their numbers.

History

SUBJECTS

1. The General History of Europe since the Fall of Rome. History 1 is an outline course, designed to give a comprehensive view of the various political, religious, industrial, and social factors of the history of Europe, and thus to pave the way for a more detailed study of limited periods. Text-books, lectures, assigned readings, and the preparation of themes.
Mon., Wed., Fri., 10.45. PROFESSOR EVANS AND MR. WOOD

History 1 must precede all other subjects in History, excepting History 11, which may precede it, History 12, which may accompany it, and History 2, which it may either precede or accompany. History 1 and 2 will not be accepted for an advanced degree. Students desiring to take all the subjects in the department should elect History 1 and 2 in their second year.

2. The General History of England. Text-book, lectures, and themes. *Mon., Wed., Fri., 8.45.* PROFESSOR BOLLES

3. The General History of America. Lectures and themes. *Mon., Wed., Fri., 10.45.* PROFESSOR BOLLES

4. Constitutional History of England. A study of the growth of the Constitution of England, with particular reference to the Stuart period. *Mon., Wed., Fri., 3.00.* (F) PROFESSOR EVANS

5. The History of the Continent during the Seventeenth and Eighteenth Centuries. A detailed study of the rise of Russia, the creation of Prussia, the rule of Richelieu and Mazarin, the age of Louis XIV, and the Ancient Regime. *Mon., Wed., Fri., 3.00* (S) PROFESSOR EVANS

History 4 and 5 will not be given in 1906–1907, but may be expected in 1907–1908.

[6. The French Revolution and the Napoleonic Period. The history of Europe from 1789 to 1815. *Mon., Wed., Fri., 3.00.* (F) PROFESSOR EVANS]

[7. The Nineteenth Century. One of the chief purposes of History 7 is to furnish some explanation of present-day questions in European politics. *Mon., Wed., Fri., 3.00.* (S) PROFESSOR EVANS]

History 6 and 7 will not be given in 1905–1906, but may be expected in 1906–1907.

11. History of the Hebrew people, from their settlement in Canaan until the rise of the Herodian Dynasty. A study of their political relations, their institutions, and their literature. *Mon., Wed., Fri., 4.00.* PROFESSOR HARMON

12. History of the Beginnings of Christianity. A study of the time of Jesus, of the rise and growth of the apostolic church, and of its literature. *Mon., Wed., Fri., 3.00.* (F) PROFESSOR HARMON

13. The Non-Christian Religions. Comparative studies of religion and civilization in ancient Egypt, Chaldea, Greece, Rome, and Germany, and in ancient and modern India, China, Japan, and Turkey. *Tu., Th., Sat., 8.45.* (F) PROFESSOR KNIGHT

14. History of the Church, including the Sects, from the Apostles to the present time. History of Doubt. *Tu., Th., Sat., 9.45.* PROFESSOR WOODBRIDGE AND PROFESSOR KNIGHT

15. Seminary in History and Public Law. Investigation of selected topics from the sources. During the year 1905-1906 the principal subject of study will be the constitutional history of the Civil War. History 15 is open only to such students, making History their major subject, as

receive the special permission of the instructor. *Hours and credit to be arranged with the instructor.* PROFESSOR EVANS

Public Law and Administration

SUBJECTS

1. Political Institutions of the United States—Federal, State, and Municipal. A study is made of government from the standpoint both of constitutional arrangements and of its actual working as modified by usage and existing conditions. Text-book: Bryce, The American Commonwealth, accompanied by lectures, assigned readings, and the preparation of a thesis. *Mon., Wed., Fri., 11.45.* (F)

PROFESSOR EVANS AND MR. PEARSON

Public Law 1 must be preceded by History 1, and must precede all other courses in this group. Students desiring to take all the subjects in Public Law should elect History 1 (also History 2 if possible) in their second year, and Public Law 1 and 2, or its alternate, in their third year.

[2. Constitutional Law. A study of the Constitution of the United States, as interpreted in the chief decisions of the Supreme Court. *Mon., Wed., Fri., 11.45.* (S) PROFESSOR EVANS]

Public Law 2 will be given in 1906-1907, and in alternate years thereafter. In the years when it is not given, one of the subjects numbered 4 to 7 will be given.

[4. European Government and Politics. A study of the constitutions of the chief European states, together with a consideration of some of the most important questions of European politics. A reading knowledge of French is desirable. Text-book, lectures, assigned reading, and the preparation of a thesis. *Mon., Wed., Fri. 11.45.* (S) PROFESSOR EVANS]

5. International Law and the History of Diplomacy: the history of international law, a consideration of its leading principles, and some account of the most important treaties and diplomatic controversies. Text-book, lectures, assigned readings, and the preparation of a thesis. *Mon., Wed., Fri., 11.45.* (S) PROFESSOR EVANS

[6. Principles of Public Administration, with particular reference to municipal corporations. *Mon., Wed., Fri., 11.45.* (S) PROFESSOR EVANS]

[7. Elements of Jurisprudence. A study of the leading juristic principles, based on the Institutes of Justinian and Blackstone's Commentaries, designed to fit students for a more intelligent study of the law from a professional standpoint. *Mon., Wed., Fri., 11.45.* (S) PROFESSOR EVANS]

POLITICAL SCIENCE*

PROFESSOR METCALF

In its course of instruction, the chief aim of the department of Political Science is to give a general view of the most important branches of political economy, beginning with the elements of the science and passing by degrees to work of the investigative order. The topics and the methods of investigation are also designed with reference to the constantly increasing needs of those who are fitting themselves for various practical careers, such as banking, transportation, or commerce; and to those who look forward to the legal profession, to the public service, to journalism, or to work in connection with social problems.

To these ends instruction is offered at present in eight different subjects. Economics 1 is designed to lay the foundation for the advanced work, but endeavors at the same time to satisfy the wants of those who seek simply a general knowledge of economics. Economics 1, or its equivalent, must precede all other study in the department. Students who desire to specialize in economics may enter upon the work in the first year of their college course, if qualified to do so. For the advanced subjects a knowledge of general, constitutional, and political history is useful. The character of the work in the advanced classes is briefly outlined in connection with the following statement of subjects.

SUBJECTS

1. Elements of Economics. (*a*) Exposition of the fundamental principles of the production, exchange, and consumption of wealth. Seager's Introduction to Economics is used as a guide. (*b*) Industrial and social reforms: labor organizations and employers' associations, coöperation, profit-sharing, factory legislation, workingmen's insurance, socialism, industrial education. Adams and Sumner's Labor Problems is used as a guide. *Tu., Th., Sat., 10.45.* PROFESSOR METCALF

2. Modern Economic History, with special reference to the economic history of the United States. Leading topics are the transition from regulated to competitive system of industry; the industrial revolution; the financial, commercial, and industrial history of the British-American colonies

* See note, page 75.

and the Confederation. In the study of the United States during the nineteenth century the problems of free and slave labor, transportation, industrial organization, tariff, economic crises, and finance will receive special attention. *Mon., Wed., Fri., 9.45.* PROFESSOR METCALF

3. Practical Sociology. The nature and methods of social science. This subject is conducted with special reference to American conditions, and comprises a study of the laws of population, the institution of the family, the development of great cities, immigration, pauperism, charities, labor organizations, and the liquor question. Lectures, reports, book reviews, and visits to charitable and correctional institutions in Boston and vicinity. *Mon., Wed., Fri., 8.45.* (S) PROFESSOR METCALF

4. Principles of Public Finance. Public Expenditures; classification of public revenues; recent reforms in taxation; the development and significance of public debts; financial administration; recent European and American works on finance. The Elements of Public Finance, by Daniels, is used as a guide. Lectures and discussions. *Tu., Th., Sat., 8.45.* (F) PROFESSOR METCALF

5. Money, Credit, and Banking: an historical course, with special reference to the financial experience of the United States. Leading topics are Hamilton's financial system; protection and revenue tariffs; the bank question; the fiscal policy of the Civil War; resumption of specie payments; the national banking system; state and local taxation; silver legislation and the panic of 1893; government loans; present currency problems. Lectures, discussions, assigned reading, and theses. Dewey's Financial History of the United States is used as a guide. *Tu., Th., Sat., 8.45.* (S) PROFESSOR METCALF

6. Selected Topics in Economics. Topics for 1905–1906 are:—*First half-year*: (*a*) Modern Industrial Combinations,—a study of the causes producing trusts, the function of the industrial promoter, capitalization of trusts, influence of industrial monopoly upon prices, profits, and wages; the practical results of regulation through publicity, taxation, and state ownership. Ripley's Trusts, Pools, and Corporations is used as a guide. *Second half-year*: (*b*) The Modern Organization of Labor,—an account of the growth, methods, and aims of modern associations of wage earners; a study of their relations to the factory system, labor disputes, labor legislation, workingmen's insurance, and state socialism; and (*c*) The Theory and History of Commercial Crises in England, France, Germany, and the United States during the nineteenth century.

Each member of the class will be required to trace the history and workings of some prominent combination of capital or labor. Either half-year may count as a half-subject. *Tu., Th., Sat., 9.45.*

PROFESSOR METCALF

7. The History of Economics: an account of the beginnings, the progress, and the various schools of economic science; study of the writings of Adam Smith, Ricardo, Mill, and others. Economics 7 is open to advanced students who are specializing in Economics. A reading knowledge of French and German is desirable. *Mon., Wed., Fri., 4.00.* (S)

PROFESSOR METCALF

[8. Municipal Problems in Europe and the United States. The social and financial problems presented by the modern city. A considerable part of the work is devoted to a detailed analysis of the problems of municipal ownership. Lectures, investigations, reports on conditions in various cities. Half-subject, to be given in 1906-1907. PROFESSOR METCALF]

9. Seminary in Economics and Sociology, designed for advanced students who are specializing in the department. Questions in economics, statistics, or sociology may be selected. *Hours and credit to be arranged with the instructor.* PROFESSOR METCALF

MATHEMATICS

PROFESSOR WREN AND ASSISTANT PROFESSOR RANSOM

The aim of the instruction in mathematics is to cultivate power of exact thinking, as well as skill in symbolic methods of drawing necessary conclusions. The class-room work is a combination of lectures with questioning of the students to ascertain that the points presented have been duly comprehended.

Mathematics 1, with 2 or 3, constitutes the required work in mathematics. The two required subjects should be taken in the Freshman year. Students who intend to pursue further work in the department should take 3 in preference to 2, and should take 4, 5, and 6 in the Sophomore and Junior years. Other subjects may be taken when the student is prepared for each. Subjects 9, 10, 13, and 14 require a knowledge of the calculus. Juniors and Seniors who have mastered the calculus may elect any of the remaining subjects.

Certain other subjects are of great value in supplementing and illustrating mathematical studies. Attention is called especially to Drawing 1, and to Civil Engineering 1 and 6.

SUBJECTS

1. College Algebra. *Tu., Th., Sat.: Division (a), 8.45; Division (b), 9.45.* (F) ASSISTANT PROFESSOR RANSOM

2. Solid Geometry. *Tu., Th., Sat., 9.45.* (S)
ASSISTANT PROFESSOR RANSOM

3. Trigonometry. *Tu., Th., Sat., 8.45.* (S)
ASSISTANT PROFESSOR RANSOM

4. Analytical Geometry. *Mon., Wed., Fri., 11.45.* (F)
ASSISTANT PROFESSOR RANSOM

5. Elements of the Calculus. *Mon., Wed., Fri., 11.45.* (S)
ASSISTANT PROFESSOR RANSOM

6. Differential and Integral Calculus. *Mon., Wed., Fri., 9.45.* (F)
ASSISTANT PROFESSOR RANSOM

7. Differential and Integral Calculus (advanced). *Mon., Wed., Fri., 9.45.* (S)
PROFESSOR WREN

9. Theory of Equations and Determinants. *Three hours for the first half-year.*
ASSISTANT PROFESSOR RANSOM

10. Differential Equations. *Three hours for the second half-year.*
PROFESSOR WREN

12. Quaternions. *Three hours for the first half-year.*
PROFESSOR WREN

Mathematics 12 is open to students who have completed Mathematics 1, 2, 3, and 4.

[13. The Theory of the Potential Function. *Three hours for the second half-year.*
PROFESSOR WREN]

14. Theoretical Mechanics. *Mon., Wed., Fri., 10.45.*
ASSISTANT PROFESSOR RANSOM

PHYSICS

PROFESSOR DOLBEAR AND ASSISTANT PROFESSOR CHASE

The work in physics begins with a consideration of general physics, this being the subject to be taken by those electing physics for their prescribed work in science, and the introductory subject for major students in the department. A text-book is used, critical comments and much additional material are supplied, and frequent lectures are given, with experiments. The aim is to present the science of physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible. Hence in each branch there are frequent returns to these first principles.

Following this is an elective subject, giving a more extended

consideration to the fundamental questions in physics. Spencer's First Principles is read and thoroughly discussed. (See Philosophy 14.)

In the physical laboratory students are given Ames and Bliss's Laboratory Manual, and a syllabus of the work, for guides. These are supplemented by Glazebrook's Physical Optics, Pickering's Manipulations, Kaulrausch's Measurements, Stewart and Gee's Practical Physics, vol. 1, Glazebrook and Shaw's Practical Physics, Nichols's Laboratory Manual, vols. 1 and 2. In addition to the experimental and note-book work, many problems are solved.

Physics 2 and Physics 4 comprise elementary work in Electricity and Magnetism, Physics 4 being a mathematical treatment based upon Nichols and Franklin's Theory of Physics, vol. 2.

In the laboratory subject in electricity much attention is given to Wheatstone's bridge and the measurement of resistance. Careful study is made of the condenser, and of the magnetic properties of iron. The candle-power of incandescent lamps, the determination of the constants of recording wattmeters, and the calibration of ammeters and voltmeters receive due attention. Students who are preparing themselves to become teachers of physics have an opportunity to perform most of the experiments needed for illustrating elementary work.

SUBJECTS

1 [70]. General Physics. Lectures and experiments. Physics 1 is to be taken by students choosing physics for their prescribed science subject, and is introductory to other subjects in physics. *Mon., Wed., Fri., 10.45.*
PROFESSOR DOLBEAR

2. Electricity. Thompson's Elementary Lessons in Electricity and Magnetism. Lectures and recitations. *Mon., Wed., Fri., 11.45.* (S)
ASSISTANT PROFESSOR H. G. CHASE

3 [71, 72]. Physical Laboratory. Mechanics, Sound, Heat, and Light. *Lectures and recitations, Mon., Wed., Fri., 8.45.* (F) *Laboratory, Tu., Th., 2.00 to 5.00; or Mon., Wed., 8.45 to 11.45.* (S) *Counting as six term hours.*
ASSISTANT PROFESSOR H. G. CHASE, MR. ROLLINS, AND MR. MUNRO

4 [74]. Electricity: Elementary Mathematical Treatment. *Tu., Th., Sat., 11.45.* (F)
ASSISTANT PROFESSOR H. G. CHASE

5 [73]. Electrical Laboratory: Measurements and Tests. *Counting as four term hours. Mon., or Fri., 2.00 to 6.00.*

ASSISTANT PROFESSOR H. G. CHASE, MR. ROLLINS, AND MR. MUNRO

Physics 5 must be preceded by Physics 4.

7. Physics 7 has been transferred to the department of Philosophy, as Philosophy 14.

[8 [87]. Telegraph and Telephone. *One hour, to be arranged.* (S)

PROFESSOR DOLBEAR]

[9. Heat. Lectures and recitations, based on Preston's Theory of Heat. Mathematics 6 is a prerequisite of Physics 9. *Counting as three term hours.* (F) *Hours to be arranged.*

ASSISTANT PROFESSOR H. G. CHASE]

CHEMISTRY

PROFESSOR MICHAEL AND PROFESSOR DURKEE

The work in the department begins with Chemistry 1, which is open for election by the students of the courses in Liberal Arts, and is required of engineering students in their second year. The instruction is by means of lectures, recitations, and laboratory work. The lectures, illustrated with numerous experiments, are intended to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including a brief account of the chemistry of the carbon compounds and the principal technical processes. One-half of the time devoted to this subject is given to practical work in the laboratory, and the student has an opportunity to verify some of the chemical theories, and to become familiar with substances and their chemical behavior. The lectures are supplemented with recitations and written examinations. An opportunity to continue the study of theoretical and inorganic chemistry is afforded by subjects 11 and 12. Those who wish may supplement the above course of lectures with laboratory practice by taking subject 14, in which some of the more difficult inorganic experiments are performed and less common preparations made.

The instruction in qualitative analysis extends through a year, and consists of two subjects (2 and 3), taught in part by lectures and recitations, but mainly by work in the laboratory. During the advanced course the student is required to analyze

correctly a large number of mixtures and minerals. Quantitative analysis is mainly taught by laboratory practice, in order that the student may attain that skill in manipulation which is necessary for this kind of work. In subject 4 the student is required to analyze the simpler salts, alloys, and minerals, and in the advanced subject 5 the more complicated minerals, ores, and commercial and food products. The analysis of organic substances is included in subject 5. Technical gas analysis (subject 9) is taught by lectures and laboratory work. Assaying (subject 7) is adapted to familiarizing the student with the practical methods of sampling and assaying gold, silver, and lead ores. The above subjects cover a comprehensive study of analytic chemistry, and are intended to give the student such thorough theoretical and practical knowledge as to prepare him for analytical work of any description. Metallurgy (subject 8) is intended to give the student some of the more important methods of extracting gold and silver from ores. It should be taken after or in connection with Fire Assay (subject 7).

The study of organic chemistry begins with a course of experimental lectures, together with recitations, which are designed to cover the general principles and methods, and include description of the most important organic compounds. For those who wish to continue the study of this science an opportunity is given by subject 13, in which by lectures the underlying theories of organic chemistry are more fully discussed, and the relations between them and organic reactions are explained. The laboratory practice in organic chemistry (subject 15) may be begun at the same time as subject 10, and continued with 13. It includes the methods for determining the physical properties and molecular weights of organic substances, and the preparation of compounds. When taken in connection with subject 13, one or more researches of special importance will be repeated by the student. The subjects 12, 13, 14, 15, and 16 may be taken as graduate work.

Subjects 12, 13, 14, and 15, are especially designed to lead

up to research work in chemistry, and students who have taken them, with subject 5, are prepared to enter on this line of advanced work. Ample facilities are offered for the successful prosecution of investigations in inorganic and organic chemistry.

Two laboratory hours are equivalent to one term hour, except in the special Course in Chemistry for the degree of Bachelor of Science, in which three hours of work in the laboratory count as one term hour. The quantitative and organic laboratories are open from nine to five o'clock daily, Saturday afternoons excepted. In Chemistry 2, 3, 4, and 5, the laboratory hours on Saturday are for students in the Course in Chemistry.

SUBJECTS

1. General Chemistry. Lectures, recitations, and laboratory work. *Lecture, Wed., Fri., 2.00; three hours of laboratory work, as assigned by the instructor. Counting as six term hours.*

PROFESSOR DURKEE, MR. MURPHY, AND MR. SMITH

2. Qualitative Analysis. Basic Analysis. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00; Sat., 8.45 to 11.45.* (F) *Counting as three term hours.*

PROFESSOR DURKEE

3. Qualitative Analysis. Acids, Analysis of Salts, Commercial and Natural Products. Lectures, laboratory work, and recitations. *Tu., Th., 2.00 to 5.00. Sat., 8.45 to 11.45.* (S) *Counting as three term hours.*

PROFESSOR DURKEE

4. Quantitative Analysis. Gravimetric and Volumetric Analysis; Analysis of Minerals. Lectures and laboratory work. *Mon., Fri., 2.00 to 5.00; Sat., 8.45 to 11.45. Counting as six term hours.* PROFESSOR DURKEE

5. Quantitative Analysis (advanced course). Analysis of Minerals, Ores, Water, Food Products, Organic Analysis. Laboratory work. *Mon., Fri., 2.00 to 5.00; Sat., 8.45 to 11.45. Counting as six term hours.*

PROFESSOR DURKEE

[6. Mineralogy 1 is equivalent to Chemisty 6.]

7. Fire Assay. Open to students who have taken 1, 2, 3, and 4. *Tu., Th., 2.00 to 5.00.* (S) *Counting as two term hours.*

PROFESSOR DURKEE

8. Metallurgy. Lectures, recitations, and laboratory work. Chemistry 8 is open to students who have taken Chemistry 1. *Wed., Fri., 10.45.* (S)

PROFESSOR DURKEE

Chemistry 8 should be taken after or together with Chemistry 7.

9. Gas Analysis. Lectures and laboratory work. Chemistry 9 is open to students who have taken Chemistry 1, 2, 3, and 4. *Mon., 2.00 to 5.00. Counting as one term hour.* (F) PROFESSOR DURKEE

10. Organic Chemistry. Lectures and recitations. Chemistry 10 is open to students who have taken Chemistry 1. *Mon., Wed., Fri., 9.45.* (F) *Counting as three term hours.* MR. MURPHY

11. Theoretical Chemistry. Lectures and recitations. Chemistry 11 is open to students who have taken Chemistry 1. *Mon., Wed., 11.45.* (S) *Counting as two term hours.* MR. MURPHY

12. Theoretical and Inorganic Chemistry (advanced course). Lectures and recitations. Chemistry 12 is open to students who have taken Chemistry 1 and 11. *Hours to be arranged.* (F) *Counting as three term hours.* PROFESSOR MICHAEL

13. Organic Chemistry (advanced course). Lectures and recitations. Chemistry 13 is open to students who have taken Chemistry 1 and 10. (S) *and* (F) *Counting as six term hours.* PROFESSOR MICHAEL

14. Laboratory work in Inorganic Preparations. *Hours to be arranged by the instructor. Counting as two term hours.* PROFESSOR MICHAEL

15. Laboratory work in Organic Analysis: determination of physical constants and molecular weights; preparation of organic compounds. *Hours to be arranged by the instructors. Counting as three term hours.* PROFESSOR MICHAEL AND MR. MURPHY

16. Original Investigations in Chemistry. *Hours to be arranged by the instructor.* PROFESSOR MICHAEL

17. Discussion of Chemical Subjects and Recent Investigations. *One hour a week.* PROFESSOR MICHAEL

18. Medical Chemistry. Lectures, quizzes, and laboratory work. (F) *Counting as thirteen term hours.* PROFESSOR AUSTIN AND DR. THORPE

Chemistry 18 must be preceded by Chemistry 1, 2, and 3. It is given at the Tufts Medical School, 416–430 Huntington Avenue, Boston.

BIOLOGY

PROFESSOR KINGSLEY AND ASSISTANT PROFESSOR LAMBERT

Instruction in biology is given both by lectures and by laboratory work, the object being to impart the scientific method of work and thought rather than to cram the student with a large number of unimportant facts. In the laboratory work four hours a week is the minimum, but mere time service is not sufficient.

Three of the subjects in this department (4M, 5M, and 9) are given at the Medical School, 416-430 Huntington Avenue, Boston. These subjects may be taken by candidates for the bachelor's degree, and in this way students contemplating the study of medicine may anticipate one year of their professional course. Those who wish these subjects to count for the bachelor's degree must have previously taken at least Biology 1 and 3.

There are three well-lighted laboratories, furnished with every requisite for good work, including microscopes, microtomes, reagents, and abundant material for illustration and dissection. There is also a department library containing more than 2,200 volumes and over 5,600 pamphlets and parts of volumes, while the college library contains the proceedings of many learned societies, both American and foreign. Besides these, proximity to Boston and Cambridge gives easy access to library facilities unequalled in any other part of America. There is required from all students taking laboratory subjects a laboratory fee of two-dollars-and-a-half a term for each subject, payable in advance.

SUBJECTS

1. General Biology. Lectures and laboratory work. *Tu., Th.: lecture, 11.45; laboratory, 2.00 to 4.00. Counting as six term hours.*

PROFESSOR KINGSLEY AND ASSISTANT PROFESSOR LAMBERT

Biology 1 is required of all who elect work in this department, and is a prerequisite for the other biological subjects.

2. Morphology of Invertebrates. Lectures and laboratory work. *Mon., Fri.: lecture, 4.00; laboratory, 2.00 to 4.00. Counting as six term hours.* PROFESSOR KINGSLEY

[3. Morphology of Vertebrates. Continuation of Biology 2. *Mon., Fri.: lecture, 4.00; laboratory, 2.00 to 4.00. Counting as six term hours.*

PROFESSOR KINGSLEY]

Biology 2 and Biology 3 are given in alternate years.

4. Elementary Physiology. Lectures, laboratory work, and recitations. *Lecture, Tu., Th., Sat., 11.45: laboratory, Tu., Th., 2.00 to 4.00.* (S) *Counting as three term hours.* PROFESSOR KINGSLEY

Biology 4 must be preceded by or accompany Chemistry 1.

4M. Human and Comparative Physiology. Lectures, recitations, conferences, and laboratory work. *Counting as thirteen term hours.* (S)

PROFESSOR DEARBORN

Biology 4M is given at the Tufts Medical School, Boston.

5. Normal Histology: a study of the tissues of vertebrates, including microscopical technique. *Lecture, Mon., 11.45; laboratory, Mon., Fri., 2.00 to 4.00.* (F) *Counting as three term hours.* PROFESSOR KINGSLEY

5M. Histology, Medical. Lectures, quizzes, and laboratory work. *Counting as five term hours.* (F)

PROFESSOR BATES AND DR. WINSLOW

Biology 5M is given at the Tufts Medical School, Boston.

6. Systematic Zoology. Laboratory work in the identification and classification of specimens. *Counting as three term hours.* (F) or (S)

PROFESSOR KINGSLEY

Biology 6 requires ability to read French and German.

7. Botany. Lectures and laboratory work. *Wed., Fri.: lecture, 11.45: laboratory, 9.45 to 11.45, or 2.00 to 4.00. Counting as six term hours.*

ASSISTANT PROFESSOR LAMBERT

8. Special Work. At least six hours weekly of laboratory work in the investigation of some problem. PROFESSOR KINGSLEY

Subjects 5 to 8 are intended for both graduates and undergraduates.

9. Human Anatomy. Lectures, quizzes, and dissection. *Counting as thirteen terms hours.* (F) PROFESSOR C. P. THAYER

Biology 9 is given at the Tufts Medical School, Boston.

GEOLOGY

MR. RICHARDS AND PROFESSOR KINGSLEY

The subjects offered in the department of Geology have a twofold object: to give an outline of the structure and history of the earth; and to give a training in the methods of observational science. The first subject (Geology 1) is introductory, open to all, and intended primarily for those who have had no previous work in science. The other subjects are such that certain preliminary studies, stated in connection with each, must be taken before entering upon them.

The illustrative collections in these lines are ample. Besides the exhibition specimens in the Barnum Museum, there is a large working collection illustrating mineralogy, lithology, and dynamical and historical geology. These are supplemented with maps, diagrams, photographs, and lantern slides. The work in each subject consists of lectures and recitations,

together with work in the laboratory and in the field. Excursions are taken to neighboring points that illustrate certain phenomena. The laboratory fees are two dollars for each subject in geology, and four dollars for each subject in mineralogy.

SUBJECTS

[1. Physiography. Lectures and recitations, laboratory and field work. Lectures, *Tu., Th., 10.45;* laboratory, *Wed., 3.00;* field work, *occasional Sat. afternoons.* (S) *Counting as three term hours.* MR. RICHARDS]

2. General Geology. Lectures, two hours a week; laboratory or field work, four hours a week; open to students who have taken Physics 1 and Chemistry 1. *Mon., Wed., Fri., 10.45 to 12.45. Counting as six term hours.* MR. RICHARDS

3. Paleontology. Recitations and laboratory work, six hours a week; open to students who have taken Geology 2 and Biology 1. *Counting as three term hours.* (F) or (S) PROFESSOR KINGSLEY AND MR. RICHARDS

[4. Field Geology. Conference, one hour; field work, six hours a week; open to students who have taken Geology 2. *First part of first and last part of second half-year. Counting as three term hours.* MR. RICHARDS]

MINERALOGY

1. Determinative Mineralogy. Lectures, two hours; laboratory, four hours a week; open to students who have taken Chemistry 1. *Tu., Th., Sat., 10.45 to 12.45.* (F) *Counting as three term hours.* MR. RICHARDS

[2. Crystallography and Descriptive Mineralogy. Lectures, two hours a week; laboratory work, four hours a week; open to students who have taken Mineralogy 1. *Tu., Th., Sat., 10.45 to 12.45.* (S) *Counting as three term hours.* MR. RICHARDS]

DRAWING AND SHOPWORK

PROFESSOR ANTHONY

DRAWING

The object of the studies pursued in the department of Drawing is three-fold: first, a development of the theory of technical drawing; second, the acquirement of precision and rapidity in the execution of the work; third, a practical application of these principles in the fluent expression of mechanical ideas by means of graphic language. Practice in the attainment of the first is acquired by freehand and geometric drawing and the

study of descriptive geometry. By means of progressive problems, in which nothing in the nature of a copy is permitted, the student is advanced to the consideration of point, line, and surface, from a purely analytic standpoint. The instruction in descriptive geometry is given by means of lectures and recitations, accompanied by frequent examinations in the freehand and instrumental construction of the problems. Rapidity of work being attainable only through precision, drawings are required to be executed with the greatest possible care and neatness. The theory and execution of a drawing having been mastered, together with the elements of kinematics, the student is directed to make such application of these principles to the illustration of mechanism as shall enable him to express his ideas graphically, in the most simple and direct manner. The machine drawings are made by such system as would be required in any well-conducted drafting-room, and the most modern methods are employed in the execution of the work as to the forms of graphic expression that may be used. A progressive course in design is pursued preparatory to and in connection with thesis work.

In the statement below, each "hour" is the equivalent of one term hour of credit.

SUBJECTS

[For hours, see the Engineering program.]

20. Mechanical Drawing. *Two hours* a week for the year.*
MR. ASHLEY

21. Descriptive Geometry. Lectures, recitations, and drawing. *Three hours a week (second half-year).*
PROFESSOR ANTHONY AND MR. ASHLEY

23. Technical Sketching. *One hour† a week (second half-year).*
PROFESSOR ANTHONY

25. Mechanism. *Three hours a week (first half-year).*
PROFESSOR ANTHONY

26. Machine Drawing. *Three hours† a week (second half-year).*
PROFESSOR ANTHONY AND MR. ASHLEY

* Each hour represents a three-hour period.
† Each hour represents a two-hour period.

28. Machine Design (Elementary). *Two hours* a week (second half-year).* PROFESSOR ANTHONY AND ASSISTANT PROFESSOR C. H. CHASE

29. Machine Design (advanced). *Two hours* a week (first half-year).* PROFESSOR ANTHONY

SHOPWORK

Work in the shops is designed to give practical knowledge of mechanical processes and of materials of construction. Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer. The course of work in the shops maintains a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shops from drawings prepared in the drafting-room.

SUBJECTS

[For hours, see the Engineering program.]

40. Carpentry, Turning, and Moulding. *Two hours* a week (first half-year).* MR. STEWART

42. Pattern-making. *One hour* a week (second half-year).* MR. STEWART

44. Forging. *One hour* a week (second half-year).* MR. STEWART

45. Vise and Machine Tools. *Three hours* a week (first half-year).* ASSISTANT PROFESSOR C. H. CHASE

46. Machine Tools. *Three hours† a week (second half-year).* ASSISTANT PROFESSOR C. H. CHASE

CIVIL AND MECHANICAL ENGINEERING

PROFESSOR BRAY AND PROFESSOR SANBORN

Students who desire to elect engineering courses as collateral to their studies in liberal arts, or with a view of pursuing study in engineering after graduation, will find open to them the subjects outlined below. For all the subjects algebra, geometry, and trigonometry are an indispensable preparation. Fuller details,

* Each hour represents a three-hour period.

† Each hour represents a two-hour period.

including the program hours, are given in this catalogue under the Department of Engineering.

SUBJECTS

90. Surveying. General field practice, computations, and plotting. *Two hours* a week (first half-year); two hours* a week (second half-year).*
PROFESSOR SANBORN AND MR. TUCKER

92. Precise Surveying. *Two hours* a week (first half-year).*
ASSISTANT PROFESSOR ROCKWELL

93. Fire Protection Engineering. *Two hours a week (second half-year).*
PROFESSOR SANBORN

94. Railroad Surveying. Field practice and office work; drawing and calculating. *Two hours* a week (first half-year).* PROFESSOR BRAY

95. Railroad Engineering (to be taken with Engineering 94). *Three hours a week, first half-year.* PROFESSOR BRAY

97. Roofs and Bridges. *Three hours a week (second half-year).*
ASSISTANT PROFESSOR ROCKWELL

In 1905–1906, subject 97 will be given in the first half-year.

99. Highways. *Two hours a week (second half-year).* MR. TUCKER

[109. Sanitary Engineering. *Three hours a week (first half-year).*
PROFESSOR SANBORN]

110. Hydraulics. *Three hours a week (second half-year).*
PROFESSOR SANBORN

111. Masonry Construction. *Three hours a week (second half-year).*
ASSISTANT PROFESSOR ROCKWELL

112. Mechanics. *Three hours a week (first half-year).*
PROFESSOR SANBORN

113. Applied Mechanics. *Three hours a week (second half-year).*
PROFESSOR BRAY

115. Experimental Mechanics (laboratory). *One hour* a week (first half-year).* PROFESSOR SANBORN

117. Structural Design. *Two hours* a week.*
ASSISTANT PROFESSOR ROCKWELL

120. Steam Engine. Theory and practice in the management of engines and boilers, valve-setting, tests. *Three hours a week (first half-year).*
ASSISTANT PROFESSOR C. H. CHASE

121. Steam Engineering. Thermodynamics and valve gears. *Three hours a week (second half-year).* PROFESSOR BRAY

* Each hour represents a three-hour period.

ELECTRICAL ENGINEERING

PROFESSOR HOOPER

To the student in the College of Letters who may desire to elect advanced work in electricity, the following subjects are offered. All require a good working knowledge of algebra, geometry, and trigonometry, while subjects 82 and 84 require a like acquaintance with calculus and differential equations.

All subjects in this department must also be preceded by Physics 74, or its equivalent.

SUBJECTS

[For hours, see the Engineering program.]

76. Electrical Problems. *Two hours a week (second half-year).* MR. ROLLINS

77. Dynamo-Electric Machinery. Recitations and lectures. *Three hours a week (second half-year).* PROFESSOR HOOPER

79. Electrical Laboratory (advanced course).† *Three hours a week for the year.* PROFESSOR HOOPER, MR. ROLLINS, AND MR. MUNRO

82. Electricity: Alternating Currents. *Three hours a week for the year.* PROFESSOR HOOPER

84. Electricity: Mathematical Treatment of Alternating Current Phenomena. *Three hours a week (first half-year).* PROFESSOR HOOPER

85. Electrical Topics. Lectures by students. *Three hours a week (second half-year).* PROFESSOR HOOPER

86. Magnetism in Iron, Nickel, and Cobalt. *Three hours a week (second half-year).* PROFESSOR HOOPER

88. Dynamo Design. Calculations and Drawings. *Two hours* a week (first half-year).* PROFESSOR HOOPER

[89. Telegraph Engineering. *Three hours a week (first half year).* MR. ROLLINS]

MUSIC

PROFESSOR LEWIS

The department of Music offers opportunities to gain a knowledge of musical history and of the principles of composition, as a basis for practical work in music or in musical criticism. The subjects, Elements of Theory, Harmony, General History of Music, and Musical Appreciation may well be taken by stu-

* Each hour represents a three-hour period.

† Each hour represents a two-hour period.

dents who wish to cultivate their appreciation of music, but have no intention of preparing themselves for professional work in the art.

SUBJECTS

1. Elements of Theory. Lectures, practice, and analysis, with various text-books for reference. *Tu., Th., 4.00.* (S) PROFESSOR LEWIS

Only acquaintance with musical notation and with the piano keyboard is required. Music 1 is introductory to Music 2.

[2. Harmony. Lectures and practical work, based on Chadwick's Manual of Harmony; collateral reading on biography and on theory. *Tu., 3.00 to 4.00; Th., 3.00 to 5.00.* PROFESSOR LEWIS]

3. Sight-reading in Song, and Harmonic Analysis. *Tu., Th., 4.00.* (F) PROFESSOR LEWIS

Only those who have finished Music 2 may take Music 3. The harmonic analysis begun in Music 2 will be continued, with special attention to the more difficult problems of modern music. Harmonic Analysis, by B. Cutter, and Melodia, by Cole and Lewis, will be used as text-books.

Music 3 will be transferred to Tuesday and Thursday at 2.00, provided program appointments permit.

4. Counterpoint, Single and Double. Lectures and practical work, based on the manuals of Goetschius, Spalding, and others; collateral reading on biography and theory. *Tu., Th., Sat., 11.45.* PROFESSOR LEWIS

A thorough theoretical knowledge of harmony, and facility in the harmonization of basses and choral melodies, are required of those who take Music 4. A full equivalent of Music 2 must have been done by students who wish to begin their college work with Music 4.

[5. Fugue, Canon, Musical Form, and the Elements of Orchestration. Lectures and practical work, with various manuals for class use and reference. *Tu., Th., Sat., 11.45.* PROFESSOR LEWIS]

Students who elect Music 5 must have attained grade A or B in Music 4, and must have given evidence of talent in melodic invention. Those who are admitted to the class are required to attend regularly during the year the public rehearsals or concerts of the Boston Symphony Orchestra, and at least eight concerts of chamber-music, as prescribed by the instructor.

6. General History of Music, from the earliest times to the present day, with especial attention to the period since the death of Palestrina. Lectures, with various treatises for reference. *Mon., Wed., Fri., 11.45.* (S) PROFESSOR LEWIS

Music 6 may be a two-hour subject during 1905-1906, but the class occasionally may meet at the third of the assigned program hours.

[7. Special studies in Musical History, in Musical Criticism, or in the development of Musical Form. *Three hours a week.* PROFESSOR LEWIS]

An equivalent of the work of Music 4, and an ability to read German and French with facility, are required of students who elect Music 7. The studies may be given in lectures, or may consist of individual work of students under the direction of the instructor.

[8. The Phenomena of Sound in their relation to Music and Musical Instruments. Lectures and experiments. *Mon., 4.00.* (S)
PROFESSOR DOLBEAR]

The first half-year's work in Physics 1 must have been done by those who elect Music 8.

[9. Musical Appreciation, Elementary. Systematic studies in musical form, from the listeners' point of view. *Two hours a week.* (S)
PROFESSOR LEWIS

For Music 9 no technical preparation is requisite, but ability to recognize a melody is presupposed. There will be lecture outlines, and automatic players will be used to assist in demonstration. Outside reading and study will be required. Music 9 will be given in 1906-1907.]

THE FINE ARTS

PROFESSOR WHITTEMORE

The department of the Fine Arts stands collaterally with literature and music—offering an opportunity for the study of the history of painting, sculpture, architecture, and the minor arts. The subjects given are open to Sophomores, Juniors, and Seniors.

[1. The History of Greek Art, with an introduction on the Arts of Egypt, Assyria, and Phœnicia. *Mon., Wed., Fri., 9.45.*
PROFESSOR WHITTEMORE]

2. The Fine Arts of the Middle Ages. *Mon., Wed., Fri., 9.45.*
PROFESSOR WHITTEMORE

[3. The Fine Arts of the Renaissance. *Mon., Wed., Fri., 9.45.*
PROFESSOR WHITTEMORE]

PHYSICAL TRAINING

MR. C. B. LEWIS AND MISS CARVILL

Regular exercise in the gymnasium is required three hours a week of all undergraduate students for the two years following entrance, from November to April. The work is optional during the remaining years of the course. Preceding the practical work in the gymnasium, the Freshmen will be given a series of lectures on the hygiene of diet, bathing, exercise, and personal habits. The aim of the department is to secure the interest and participation of the students in such exercise and training as each and all need for corrective, hygienic, or recreative purposes. A healthy body, erect carriage, self-control, fearlessness, and muscular co-ordination are among the objects sought. In addition to class drills in free movements with wands, dumb-bells, and Indian clubs, and exercises in squads, on the various kinds of mixed apparatus, a special exercise card is made out for each student, as the result of a careful medical examination, measurement, and strength test. Out-door sports are fostered, but care is taken that the students do not exercise beyond their capacity, it being the intention to make the physical training of such character that the weakest as well as the strongest can engage in it with profit.

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* this year are bracketed in department statements
The prefixed w signifies whole year; F, first half-year; S, second half-year
M Tu W Th F S indicate days for two-period and one-period subjects

MONDAY, WEDNESDAY, FRIDAY

	8.45	9.45	10.45	11.45
LEONARD				
SCHNEIDER				
BOLLES	Hst w2		Hst w3	
SHIPMAN				
DOLBEAR			Phs w1	
HARMON				
FAY	Ger w6	Frn w6	Ger w5	
TOUSEY			Phl F6, S7	Phl w15
KNIGHT				
WOODBRIDGE				
KINGSLEY				Bio F5 M *lect*
MICHAEL				
CUSHMAN		Phl F10,S11,12,13	Phl w9	
L. R. LEWIS	Frn w2	Frn w1		Mus S6
MAULSBY	Eng F17	Eng w25, 26	Eng w19, 20	
DURKEE			*Chm* S6 WF	
DENISON		ClA F1,3, S5		Lat w3, 4
EVANS			Hst w1	Phl F1,S2,4,5,6,7
H. G. CHASE	Phs F3, S3 MW	*Phs* S3 MW	*Phs* S3 MW	Phs S2
METCALF	PlS F180, S3	PlS w2		
WADE		ClA S2, F4, S6		Grk w1
WHITTEMORE	Eng S18	EnA w1, 2, 3		Eng w10, 15
WREN		Mth S7		
LAMBERT		*Bio* w7 WF	*Bio* w7 WF	*Bio* w7 WF *lect*
RANSOM		Mth F6	Mth w14	Mth F4, S5
REED	Ger w2	Ger w1		
RICHARDS			Geo w2	Geo w2
SMITH				
MURPHY		Chm F10		*Chm* S11 MW
C. B. LEWIS				

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* this year are bracketed in department statements
Subjects in Roman type occupy three periods
Subjects in *Italic* type occupy two periods; in **Boldface** type, one period

MONDAY, WEDNESDAY, FRIDAY

	2.00	3.00	4.00	5.00*
LEONARD				
SCHNEIDER				
BOLLES				
SHIPMAN				
DOLBEAR			**Mus** s8 M	**Phs** s8
HARMON		Hst F12	Hst W11	
FAY	Frn W4			
TOUSEY				
KNIGHT				
WOODBRIDGE				
KINGSLEY	*Bio* W2, 3, F5 MF	*Bio* W2, 3, F5 MF	*Bio* W2, 3 MF *lec*	**ScGer, Geo** FS3
MICHAEL				Chm 12, 13, 14
CUSHMAN				
L. R. LEWIS		Frn W5		Mus W7
MAULSBY	Eng W12			**Eng** W28
DURKEE	*Chm* W1 WF *lect*;	*also* 2-5. *Chm*	W4, 5 MF, F9 M	*Chm* s05
DENISON		Lat W2		
EVANS		Hst F4, 6, S5, 7		Hst W15
H. G. CHASE	*Phs* W5 MF	*Phs* W5 MF	*Phs* W5 MF	*Phs* W5 MF
MRTCALF			PlS S7	
WADE	Grk W2			Grk S10,11
WHITTEMORE				**Eng** F23
WREN				
LAMBERT	*Bio* W7 WF	*Bio* W7 WF		
RANSOM				
REED				
RICHARDS		Geo S1 W		
SMITH	**Chm** W1 M	**Chm** W1 M	**Chm** W1 M	
MURPHY				
C. B. LEWIS			**Phs** TrnM	Phs Trn

*Hours in this column are subject to re-assignment during the opening week

Assignments for current year are given under the statements of the respective departments in the complete catalogue

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* this year are bracketed in department statements
The prefixed W signifies whole year; F, first half-year; S, second half-year
M Tu W Th F S indicate days for two-period and one-period subjects

TUESDAY, THURSDAY, SATURDAY

	8.45	9.45	10.45	11.45
LEONARD				Eng w27
SCHNEIDER	Grk w4	Grk w5		
BOLLES				
SHIPMAN			Phl F3, S4	
DOLBEAR				
HARMON				
FAY	Ger w3	*Frn w3b* TuTh	Ital w1	
TOUSEY			Phl S8	
KNIGHT	Hst F13			Phl w16
WOODBRIDGE		Hst w14		Heb w1
KINGSLEY				*Bio* F1 TuTh, S4
MICHAEL				
CUSHMAN		Phl F1, 2, S5		Ped S1
L. R. LEWIS	Frn w3			Mus w4, 5
MAULSBY	Eng F13, w11		Eng F1, S7	
DURKEE	8.45–11.45 : Chm F2, S3, W4, 5S ; . . . *also*, 9.45–12.45 ; Chm 1, Tu			
DENISON	Lat w1a	Lat w1b		
EVANS				
H. G. CHASE				Phs F4
METCALF	PlS F4, S5	PlS w6	PlS w1	
WADE		Grk w1		Grk w3
WHITTEMORE	Eng F14		Eng F16, S2	
WREN				
LAMBERT				*Bio* S1 TuTh
RANSOM	Mth F1a, S3	Mth F1b, S2		
REED		*Ger w3b* TuTh		Ger w4
RICHARDS			Min F1, S2, *Geo* S1	Min F1, S2
SMITH		Chm W1 Tu	Chm W1 Tu	Chm W1 Tu
C. B. LEWIS				

TABULAR PROGRAM, COLLEGE OF LETTERS

Subjects *not given* this year are bracketed in department statements
Subjects in Roman type occupy three periods
Subjects in *Italic* type occupy two periods; in **Boldface** type, one period

TUESDAY, THURSDAY

	2.00	3.00	4.00	5.00*
LEONARD				
SCHNEIDER				
BOLLES		*Hst* F8		
SHIPMAN		*Eng* F5		Eng F8
DOLBEAR				Phl S14
HARMON				
FAY				
TOUSEY				
KNIGHT				
WOODBRIDGE				Heb W2
KINGSLEY	*Bio* F1, S4	*Bio* F1, S4		Bio F56, W8
MICHAEL				Chm 15,16,17
CUSHMAN				
L. R. LEWIS		*Mus* W2	**Mu** W2 Th, F3, S1	*Mu* S9
MAULSBY	**Ora** W1 aTu, bTh	*Ora* S7		**Ora** W2, 3, 4
DURKEE	*Chm* F2, S3, 7	*Chm* F2, S3, 7	*Chm* F2, S3, 7	
DENISON	**Lat** W5 Tu, 6 Th			**Lat** W7, F8, S9, 10
EVANS				
H. G. CHASE	*Phs* S3	*Phs* S3	*Phs* S3	Phs F9
METCALF				PlS W8, 9
WADE				**Grk** W6, 7, S8, 9
WHITTEMORE				
WREN				Mth S10, F12, S13
LAMBERT	*Bio* W1	*Bio* W1		
RANSOM				Mth F9
REED				
RICHARDS				Geo FS3, 4
SMITH				
C. B. LEWIS				Phs Trn

* Hours in this column are subject to re-assignment during the opening week

Assignments for current year are given under the statements of the respective departments in the complete catalogue

Courses in Science *

The special courses in Science lead to the degree of Bachelor of Science. They are intended for graduates of high schools who wish to prepare themselves for specialized scientific work. Like the Engineering courses, they are placed upon a technical basis, and far less latitude is allowed the student in the choice of subjects than in the course in Arts, the election being made when the course is chosen. In addition to the studies given below for each course, students must elect other studies so as to make the total one hundred and twenty-eight term hours.

COURSE IN GENERAL SCIENCE

PROFESSOR KINGSLEY

Freshman Year

English 1. The Theory and Practice of Composition. (*First half-year.*) See page 64.

English 2. A Study of Expression. (*Second half-year.*) See page 64.

German 1. Elementary German. See page 68.

Or **German 2.** Intermediate German. See page 68.

French 1. Elementary French. See page 69.

Or **French 2.** Intermediate French. See page 69.

The order in which French and German are followed depends upon the language submitted for admission to the College. A student admitted with French will take French 2 and German 1, or, with German, will take German 2 and French 1.

Physics 1. General Physics. See page 86.

Chemistry 1. General Chemistry. See page 89.

Biology 1. General Biology. See page 91.

Physical Training.

* For entrance requirements to the Courses in Science, see pages 45 and 46.

Sophomore Year

German 2. As above.

Or **German 3.** For the rapid reading of modern prose. (*First half-year.*) See page 68.

And **Biological German.** Reading of some important biological work. *Two hours a week.* (*Second half-year.*)

French 2. (For those entering with German.)

Biology 2 or 3. General Biology. See page 91.

Mathematics 1, with 2 or 3. Algebra, Geometry, Trigonometry. See pages 84 and 85.

Chemistry 2. Qualitative Analysis. See page 89.

Chemistry 3. Qualitative Analysis. See page 89.

Physical Training.

Junior Year

German 3 and Biological German (for those entering with French), as above.

Physics 3. Physical Laboratory. See page 86.

Chemistry 10. Organic Chemistry. See page 90.

Biology 2 or 3. See page 91.

Biology 4. Elementary Physiology. See page 91.

Biology 5. Histology. See page 92.

Senior Year

Geology 1. Physiography. See page 93.

Philosophy 1 or 2. Introductory subject. (*First half-year.*) See page 76.

Philosophy 5. Psychology. (*Second half-year.*) See page 77.

Biology 7. Botany. See page 92.

Mineralogy 1. Determinative Mineralogy. See page 93.

Geology 2. Geology. See page 93.

Special work (six term hours) in Biology, Geology, Chemistry, or Electricity.

MEDICAL PREPARATORY COURSE

PROFESSOR KINGSLEY

Freshman Year

As in the Freshman year of the course in General Science.

Sophomore Year

As in the Sophomore year of the course in General Science, except Mathematics.

Junior Year

German 3B. (*First half-year.*) **Biological German.** (*Second half-year*, for those entering with French.) **Biology** 2 or 3, and 4, and 5, and Geology, as in the Senior year of the course in General Science.

Philosophy 1 (or 2) and 5, as in the Senior year of the course in General Science.

Chemistry 10. Organic Chemistry. See page 90.

Senior Year

Philosophy 3. Logic, especially Deductive. See page 76.

Philosophy 6. The Theory of Ethics. See page 77.

Human Anatomy and Physiology. (At Tufts Medical School.)

Medical Chemistry. (At Tufts Medical School.)

COURSE IN CHEMISTRY

PROFESSOR DURKEE

Freshman Year

English 1. The Theory and Practice of Composition. (*First half-year.*) See page 64.

English 2. A Study of Expression. (*Second half-year.*) See page 64.

German 1. Elementary German. See page 68.

Or **German 2.** Intermediate German. See page 68.

Those entering with German will take German 2. Others will take German 1.

Mathematics 1, with 2 or 3. Algebra, Solid Geometry, and Trigonometry. See pages 84 and 85.

Physics 1. General Physics. See page 86.

Chemistry 1. General Chemistry. See page 89.

Mechanical Drawing. *Two hours a week* (*first half-year*). See page 94.

Elective. *Three hours a week* (*second half-year*).

Physical Training.

Sophomore Year

German 2. As above.

Or **French 1.** Elementary French. See page 69.

French 1 will be taken by those who entered without French. Others will take German 2.

Physics 3. Physical Laboratory. See page 86.

Chemistry 2. Basic Qualitative Analysis. See page 89.

Chemistry 3. Qualitative Analysis of Acids, Salts, Commercial and Natural Products. See page 89.

Chemistry 4. Quantitative Analysis, Gravimetric and Volumetric; Analysis of Minerals. See page 89.

Chemistry 10. Organic Chemistry. See page 90.

Chemistry 11. Theoretical Chemistry. See page 90.

Physical Training.

Junior Year

Chemistry 5. Quantitative Analysis (advanced). See page 89.

Mineralogy 1. See page 93.

Chemistry 8. Metallurgy. See page 89.

Chemistry 12. Theoretical and Inorganic Chemistry (advanced). See page 90.

Chemistry 13. Organic Chemistry (advanced). See page 90.

Chemistry 14. Laboratory work in Inorganic Preparations. See page 90.

Chemistry 15. Laboratory work in Organic Analysis. See page 90.

Biology 1. General Biology. See page 91.

Political Science 1. Elements of Political Economy, and Practical Problems. See page 82.

Senior Year

Biology 4. Elementary Physiology. See page 91.

Chemistry 7. Fire Assay. See page 89.

Chemistry 9. Gas Analysis. See page 90.

Chemistry 13. Organic Chemistry (advanced). See page 90.

Elective. *Six hours a week.*

Research and Thesis. *Four hour a week (first half-year); ten hours a week (second half-year).*

THE DEPARTMENT OF ENGINEERING

Faculty of the Department of Engineering

FREDERICK W. HAMILTON, A.M., D.D., ACTING PRESIDENT, 44 Townsend St., Roxbury

GARDNER C. ANTHONY, A.M., SC.D., DEAN . . 14 Professors Row
Professor of Technical Drawing

HARRY G. CHASE, B.S., SECRETARY . . . . . 2 Curtis Avenue
Assistant Professor of Physics

CHARLES D. BRAY, C.E., A.M. . . . . 98 Professors Row
Professor of Mechanical Engineering

AMOS E. DOLBEAR, M.E., PH.D., LL.D. . . . 134 Professors Row
Professor of Physics

CHARLES E. FAY, A.M., LITT.D. . . . . 92 Professors Row
Wade Professor of Modern Languages

WILLIAM L. HOOPER, A.M., PH.D. . . . . 124 Professors Row
Professor of Electrical Engineering

FRANK B. SANBORN, C.E., M.S. . . 8 Buena Vista Park, Cambridge
Professor of Civil Engineering

FRANK W. DURKEE, A.M. . . . . 38 Professors Row
Professor of Inorganic Chemistry

HENRY C. METCALF, A.B., PH.D. . . . . 92 Professors Row
Jackson Professor of Political Science

FRANK G. WREN, A.M. . . . . Talbot Ave.
Walker Professor of Mathematics

CHARLES H. CHASE, S.B. . . . . Stoneham
Assistant Professor af Steam Engineering

EDWARD H. ROCKWELL, S.B. . . . 133 Powder House Boulevard
Assistant Professor of Civil Engineering

SAMUEL C. EARLE, A.M. . . . . 9 Electric Avenue
Assistant Professor of English

THOMAS WHITTEMORE, A.B. . . . . ΘΔΧ House
Professor of English

CHARLES B. LEWIS . . . . . 11 Fairmount St., Medford
Director of the Gymnasium

WILLIAM H. REED, JR., A.M. . . . . 81 Walnut Ave., Roxbury
Instructor in German

PHILIP H. COBB, A.B., PH.D. . . . . 159 College Avenue
Instructor in Organic and Physical Chemistry

EDWIN B. ROLLINS, B.S. . . . . 1 West Hall
Instructor in Electrical Engineering

GEORGE F. ASHLEY . . . . . 11 Laurel St., Somerville
Instructor in Drawing

CHARLES E. STEWART, S.B. . . . . 32 Dearborn Road
Instructor in Shopwork

PHILIP M. HAYDEN, A.B. . . . . Dean Hall, 6
Instructor in French

JAMES I. TUCKER, B.S. . . . . 39 Pearson Road
Instructor in Civil Engineering

MELVILLE S. MUNRO, B.S. . . . . 114 Curtis Street
Instructor in Electrical Engineering

HOWARD R. WHITNEY . . . . . 107 Sycamore St., Somerville
Instructor in Mathematics

CHARLES J. CARTER . . . . . 93 Wenham St., Jamaica Plain
Instructor in Machine Work

COMMITTEE ON PROMOTIONS

Dean Anthony, *Chairman;* Professors Hooper and Wren

Department of Engineering

The department offers courses of four years in CIVIL ENGINEERING, MECHANICAL ENGINEERING, ELECTRICAL ENGINEERING, AND CHEMICAL ENGINEERING, each leading to the degree of Bachelor of Science. Each course is arranged to permit of considerable freedom of election in each of the other courses. Election may also be made in the College of Letters.

While most of the instruction is given in engineering subjects, leading to a professional degree, the primary object of the department is to give a broad education which shall promote the highest development of every student who may seek instruction through any of its courses.

The Department of Engineering is open to all earnest stu dents, whether they are candidates for a degree, or desire special courses. Through its scientific fitting school it offers unusual advantages to those whose previous preparation has been in the field of practice rather than theory, and whose training in the rudimentary branches may be deficient.

REQUIREMENTS FOR ADMISSION

Candidates for admission to the Engineering Department must have received adequate preparation in certain required subjects, as follows:—

Elementary English;	***One Elementary Foreign Language;**
Algebra;	**Plane and Solid Geometry.**

From the following list of Secondary subjects, to each of which a number expressing its value in units is assigned, they shall submit in addition a selected group aggregating three units:

Elementary History, 1 or 2	**Mechanical Drawing, 1**
Physics, 1 or 2	**Freehand Drawing, 1**
Chemistry, 1 or 2	**Shop Work, 1**

Detailed statements concerning these admission requirements will be found on pages 45 to 58.

* Students will find it an advantage to present both French and German. Preparatory work in Modern Languages above the entrance requirements may be counted toward the degree of B.S. in Engineering on the conditions stated on page 148.

EXPENSES

The following estimates represent the fixed annual expenses:

*Tuition	$120.00	$120.00
Physical culture, including gymnasium and grounds	10.00	10.00
Reading-room	1.00	1.00
Half room-rent	20.00	91.00
Hospital	2.00	2.00
Board, $4.00 to $5.00 a week (36 weeks)	144.00	180.00
Total	$297.00	$404.00

SPECIAL CHARGES. Chemical Laboratory charges for breakage (average)	$4.00
Chemical Laboratory charges for chemicals	8.00
Instruments, books, and general supples (if new)	15.00 to 25.00
Non-resident students not renting rooms at the college are subject to a fixed charge of	10.00

As an aid toward meeting expenses, there are many opportunities for work in the shops, laboratories, and drafting rooms, for which a fixed rate of compensation is established. Applications for these positions should be made to the Dean.

For a list of available scholarships, and for further regulations concerning expenses, consult the table of contents under "General Information".

The Degree of Civil Engineer, Electrical Engineer, Mechanical Engineer, or Master of Science will be conferred upon Bachelors of Science in Civil, Electrical, or Mechanical Engineering, who shall satisfactorily pursue advanced professional study at the College for one year, under the conditions required of candidates for the Degree of Master of Arts; or who shall present suitable evidence of three years of professional work, one year of which must be in a position of responsibility, in which case a certain amount of professional study will be assumed. A thesis based upon this study will be required. For the detailed conditions under which these degrees are granted, consult the table of contents under the "Graduate Department."

*Beginning with students entering in 1906, the charge for tuition will be $150.00.

Further information concerning the Department of Engineering will be found in a special pamphlet, to be obtained by addressing Dean Anthony, Tufts College, Mass.

A. B. AND B. S. IN FIVE YEARS

Provision has been made, for such students as are prepared to enter upon the course leading to A.B. (see pages 45 to 58), to secure the degrees of Bachelor of Arts and Bachelor of Science in five years.

In order to obtain both degrees at the end of five years, Freshmen should enter with one unit of credit in Solid Geometry, under the Secondary Group (pages 46, 55).

The work in College would then be distributed as follows:—

Freshman Program

	TERM HOURS
Languages	18
Physics 1	6
Mathematics 1 and 3	6
English 1 and 2	6

Engineering must be chosen as the major department.

Sophomore Program

First half-year:

	TERM HOURS
History 1	3
Philosophy 3	3
Mathematics 5	3
Shop-work 40	2
Drawing 20	2
Freehand Drawing 22	1
Elective	3
	17

Second half-year:

	TERM HOURS
History 1	3
Philosophy 4 or 5	3
Drawing 20	3
Drawing 21	1
Drawing 23	2
Shop-work 42	1
Elective	3
	16

The third, fourth, and fifth years correspond to the Sophomore, Junior, and Senior years of the course in Engineering selected by the student (see pages 121 to 127), except that an elective is allowed in place of the modern language required in the Sophomore year.

Courses of Instruction

It is believed that four years spent mainly upon technical subjects, yet providing opportunity for such language study as will enable the student to become familiar with foreign books of scientific value, will furnish a solid foundation for advanced theoretical attainment and professional skill. Considerable freedom is allowed in the choice of electives during the Junior and Senior years.

The program is so arranged as to require of each student about fifty hours of work per week. This includes the time necessary for the recitation and its preparation, together with hours for laboratory work.

The subjects of instruction in the Freshman year are alike for all courses. The outlines of the courses for the three following years are tabulated under the heads of Civil Engineering, page 121, Mechanical Engineering, page 123, Electrical Engineering, page 125, Chemical Engineering, page 127.

The figures in the column at the right indicate the number of the subject. The details of these studies will be found on pages 128 to 149.

FRESHMAN YEAR

[Alike for all courses.]

First Term	No.	Second Term	No.
Algebra	1	Analytical Geometry	5
Trigonometry	3	Descriptive Geometry	21
Mechanical Drawing	20	Mechanical Drawing	20
Freehand Drawing	22	Technical Sketching	23
Carpentry, Turning, and Foundry	40	Pattern Making	42
Physics	70	Physics	70
English	140	English	141
French or	161	French or	161
German	166	German	166
Physical Training		Physical Training	

CIVIL ENGINEERING

The studies which underlie general engineering and science —mathematics, drawing, modern languages, physics, and chemistry—dominate the course during the first two years, but during this period the student also pursues a practical training in courses of shopwork and field surveying.

In the last two years instruction follows in precise surveying, hydrography, topography, and railroad surveying, about two-thirds of the time being spent in actual field practice, for which the college location affords excellent advantages; mechanical properties of timber, cement, iron, and steel, are studied in the class room and in the testing laboratory; outline and detail designs for roofs, bridges, arches, and other structures are made in a well-equipped drafting room; the methods of water purification, water supply for towns, systems of drainage, sewerage, and sewage disposal receive careful attention by general study and visits to some of the excellent municipal plants near at hand.

Elective studies are offered in Junior and Senior year which permit the student to take important courses in mathematics, chemistry, or electrical and mechanical engineering. By this means his knowledge of other engineering subjects may be extended, and he will be fitted to follow general engineering practice, or to choose intelligently some branch of the profession in which he can advisedly specialize. Specialization is thus possible during these last two years, but in no way is it forced upon the student.

In fact a comprehensive course of study offers many advantages; and present demands in bridge, structural, hydraulic, and sanitary engineering, fire protection, general surveying, mill and masonry construction, are such that the course in civil engineering which includes these subjects must be a broad one, enabling its graduates to advance rapidly in numerous fields of work. This department has endeavored to shape its methods of instruction so as to meet satisfactorily these requirements of the profession of civil engineering.

CIVIL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 119.

SOPHOMORE YEAR

First Term	No.	Second Term	No.
Calculus	7	Calculus	7
Mechanism	25	Forging	44
General Chemistry	50	General Chemistry	50
Physics	71	Physical Laboratory	72
Surveying	90	Surveying	91
Physical Training		Physical Training	
**One of the following electives:*		** Two of the following electives:*	
English	144	Machine Drawing	26
§English	151	English	142
§English	152	English	143
French	162	§English	152
German	167	French	163
†‡ Spanish	171	German	167
‡History (1)		†‡ Spanish	171
		‡History (1)	

JUNIOR YEAR

First Term	No.	Second Term	No.
Applied Calculus	8	Roofs and Bridges	97
Qualitative Analysis	52	Hydraulic Measurements	108
Precise Surveying	92	Applied Mechanics	113
Mechanics	112	Structural Design	117
Experimental Mechanics	115	** Three of the following electives:*	
Steam Engine	120	Differential Equations	9
** Two of the following electives:*		Electrical Problems	76
Mineralogy	59	Dynamo-Electrical Machinery	77
Electricity and Magnetism	74	Fire Protection Engineering	93
Contracts and Specifications	100	Highways	99
English	144	Steam Engineering–Thermodynamics	121
English	145		
§English	152		
§English	153		

SENIOR YEAR

First Term	No.	Second Term	No.
Railroad Surveying	94	Hydraulics	110
Railroad Engineering	95	Masonry	111
‖Roofs and Bridges	97	Thesis	135
†Sanitary Engineering	109	** Two of the following electives:*	
Political Economy	180	Dynamo-Electric Machinery	77
** Two of the following electives:*		Railroads—Economic Location	96
Gas Analysis	63	Bridge Design	98
Applied Mechanics	114	§English	154
Structural Design	118	Political Economy	185
Geology	130	Political Economy	186
English	143		
§English	153		

* Electives must be approved by the Department. † Not given in 1905-1906.
‡ Year subject. § See page 147. ‖ Given in junior year after 1905-1906.

MECHANICAL ENGINEERING

The course of instruction in mechanical engineering relates particularly to machinery,—its design, construction, and operation. The first two years are devoted to the preparatory studies common to all engineering courses, and include mathematics, physics, chemistry, drawing, and language, all of which have an important bearing upon the successful pursuit of the more technical subjects. Technical drawing and descriptive geometry receive much attention during the first year, and are more completely developed in the advanced work in mechanism and design.

In the last two years the technical work of the course is developed. It includes mechanics, both pure and applied, chemical analysis, and the properties of engineering materials, particularly iron and steel. The laboratory practice includes work in the physical, chemical, electrical, mechanical, and steam-engineering laboratories. In machine design each student prepares complete working drawings of some machine, or part of a machine. Shop work is carried through five terms, and includes carpentry, wood-turning, moulding, pattern-making, forging, vise and machine tool-work.

The systematic study of steam and its application occupies a considerable part of the Junior and Senior years. The principles involved in the generation and application of power, the management of boilers and engines, the setting of valves and use of the indicator, are carefully considered. This is followed by work in thermodynamics, including the mechanical theory of heat and the properties of steam and gases. Steam engineering includes the study of the steam engine, compound and multiple expansion, and boilers of various types; determination of proportions for developing a required power; computation of sizes required for strength and endurance; the effect and balance of reciprocating parts, and the various types of valve motions. Engine and boiler testing constitute an important part of this course.

MECHANICAL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 119.

SOPHOMORE YEAR

First Term	No.	Second Term	No.
Calculus	7	Calculus	7
Mechanism	25	Forging	44
General Chemistry	50	General Chemistry	50
Physics	71	Physical Laboratory	72
Surveying	90	Machine Drawing	26
Physical Training		Physical Training	
* *One of the following electives:*		* *Two of the following electives:*	
English	144	Surveying	91
§ English	151	English	142
§ English	152	English	143
French	162	§ English	152
German	167	French	163
‡ † Spanish	171	German	167
‡ History (1)		† Spanish	171
		‡ History (1)	

JUNIOR YEAR

First Term	No.	Second Term	No.
Applied Calculus	8	Differential Equations	9
Machine Shop	45	Machine Design	28
Qualitative Analysis	52	Machine Shop	46
Electricity and Magnetism	74	Applied Mechanics	113
Mechanics	112	SteamEngineering-Thermodynamics	121
Experimental Mechanics	115	Engineering Laboratory	123
Steam Engine	120	* *One of the following electives:*	
* *One of the following electives:*		‡Electrical Laboratory	73
‡Electrical Laboratory	73	Dynamo-Electric Machinery	77
English	144	Roofs and Bridges	97
English	145	Structural Design	117
§ English	152		
§ English	153		

SENIOR YEAR

First Term	No.	Second Term	No.
Machine Design	29	Hydraulics	110
Applied Mechanics	114	Engineering Laboratory	124
Steam Engineering—Design	122	Engineering Topics	128
Engineering Laboratory	124	Thesis	135
Political Economy	180	* *Two of the following electives:*	
* *Two of the following electives:*		Dynamo-Electric Machinery	77
Gas Analysis	63	Alternating Current Machinery	83
Electricity	82	Magnetism	86
Dynamo Design	88	Roofs and Bridges	97
English	145	Masonry	111
§ English	153	§ English	154
		Political Economy	185
		Political Economy	186

* Electives must be approved by the Department.

† Not given in 1905-1906. ‡ Year subject. § See page 147.

ELECTRICAL ENGINEERING

The aim of the course in electrical engineering is to fit men to deal intelligently with electrical problems likely to be presented to the practical engineer.

With this end in view, mathematics and drawing are pursued through nearly the entire course. Physics and mechanics, both pure and applied, receive much attention, while more than half of the Senior year is devoted to the study of electricity by means of practical work in the electrical laboratory, together with recitations and lectures on the principles involved. The purely electrical work extends over the Junior and Senior years of the course, the Junior year being devoted to the more elementary theory and the practice of the simpler tests and measurements, the Senior year to the more advanced theory and the practice of the more complex tests and measurements.

The calibration and standardization of electrical instruments receive due attention. The magnetic properties of irons, armature reactions in dynamos, the efficiency of electrical machinery, and the location of losses are carefully studied. The theory of shunts and the Wheatstone bridge leads to the consideration of the distribution of current and potential in a network of conductors.

Much time is given to design and construction. Most students during their course construct or assist in the construction of some piece of electrical machinery of commercial dimensions.

The theory of alternating currents, both single and polyphase, is fully developed; and the many important practical problems thus evolved are carefully treated, both by numerical computation and by graphic representation.

A few weeks are devoted to the study of Maxwell's theory and its experimental confirmation by Hertz.

ELECTRICAL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 119.

SOPHOMORE YEAR

First Term	No.	Second Term	No.
Calculus	7	Calculus	7
Mechanism	25	Forging	44
General Chemistry	50	General Chemistry	50
Physics	71	Physical Laboratory	72
Surveying	90	Machine Drawing	26
Physical Training		Physical Training	
** One of the following electives:*		** Two of the following electives:*	
English	144	Surveying	91
‡English	151	English	142
‡English	152	English	143
French	162	‡English	151
German	167	‡English	152
‡† Spanish	171	French	163
‡ History (1)		German	167
		‡† Spanish	171
		‡History (1)	

JUNIOR YEAR

First Term	No.	Second Term	No.
Applied Calculus	8	Differential Equations	9
Qualitative Analysis	52	Machine Design	28
Electrical Laboratory	73	Electrical Laboratory	73
Electricity and Magnetism	74	Electrical Problems	76
Mechanics	112	Dynamo-Electric Machinery	77
Experimental Mechanics	115	Applied Mechanics	113
Steam Engine	120	** One of the following electives:*	
** One of the following electives:*		Roofs and Bridges	97
Machine Shop	45	Steam Engineering–Thermodynamics	121
English	144		
English	145		
§ English	152		
§ English	153		

SENIOR YEAR

First Term	No.	Second Term	No.
Electrical Laboratory	79	Electrical Laboratory	79
Electricity	82	Electricity	83
Dynamo Design	88	Telegraph and Telephone	87
Political Economy	180	Hydraulics	110
** Three of the following electives:*		Thesis	135
Machine Design	29	** Two of the following electives:*	
Gas Analysis	63	Electrical Topics	85
Mathematics of Alternating Currents	84	Magnetism	86
Applied Mechanics	114	†Telegraphic Engineering	89
Steam Engineering	122	§English	154
		Political Economy	185

* Electives must be approved by the Department.

† Not given in 1905-1906.

‡ Year subject.

§ See page 147.

CHEMICAL ENGINEERING

The course in chemical engineering covers a period of four years, and leads to the degree of Bachelor of Science in Chemical Engineering.

The subjects in this course have been arranged to give the training in mathematics, physics, chemistry, and mechanical and electrical engineering that will assist the graduates of the department in solving the mechanical and chemical problems that present themselves when chemistry is applied in practical ways. Subjects intended for general training, the greater part of the pure mathematics, and the less technical engineering subjects have purposely been introduced early in the course. This arrangement allows much time for the study of subjects in chemistry and advanced engineering in the last two years. The mathematical, physical, and general engineering subjects, as well as subjects that are intended for general culture, correspond, for the most part, to those of the course in mechanical and electrical engineering.

In chemistry the subjects are numerous enough to train the student thoroughly in theoretical and descriptive inorganic and organic chemistry, to give him a working knowledge of the different branches of chemical analysis, and to make him familiar with many of the practical applications of chemistry. The chemical and engineering subjects are taught, so far as it is possible, in the laboratories, and excursions are made from time to time to plants where technical chemical operations are performed.

Young men who graduate from the course in chemical engineering find employment in constructing and operating plants where chemistry is applied commercially, such as gas-works, dye-works, bleacheries, paper and pulp mills, acid and alkali manufactories.

CHEMICAL ENGINEERING

FRESHMAN YEAR—alike for all courses. See page 119.

SOPHOMORE YEAR

First Term	No.	Second Term	No.
Calculus	7	Calculus	7
Mechanism	25	Forging	44
General Chemistry	50	General Chemistry	50
Physics	71	Physical Laboratory	72
Surveying	90	Machine Drawing	26
Physical Training		Physical Training	
* *One of the following electives:*		* *Two of the following electives:*	
English	144	Surveying	91
§ English	151	English	142
§ English	152	English	143
French	162	§English	152
German	167	French	163
‡ † Spanish	171	German	167
‡ History(1)		† Spanish	171
		‡ History (1)	

JUNIOR YEAR

First Term	No.	Second Term	No.
Qualitative Analysis	52	Qualitative Analysis	53
Organic Chemistry	55	Quantitative Analysis	61
Quantitative Analysis	61	Theoretical Chemistry	69
Electricity and Magnetism	74	Electrical Problems	76
Mechanics	112	Dynamo-Electric Machinery	77
Experimental Mechanics	115	Applied Mechanics	113
Steam Engine	120	* *One of the following electives:*	
		Roofs and Bridges	97
		Masonry	111
		Steam Engineering–Thermodynamics	121

SENIOR YEAR

First Term	No.	Second Term	No.
Quantitative Analysis	61	Metallurgy	57
Gas Analysis	63	Quantitative Analysis	61
Chemical Engineering	65	Chemical Engineering	65
‖Mineralogy		Assaying	67
Electro Chemistry	68	Electro-Chemistry	68
Political Economy	180	Thesis	135
* *One of the following electives:*		* *One of the following electives:*	
Machine Shop	45	Roofs and Bridges	97
† Sanitary Engineering	109	Hydraulics	110
English	144	Engineering Topics	128
English	145	§ English	154
§ English	152		

* Electives must be approved by the Department.

† Omitted in 1905-1906.

‡ Year Course. § See page 147. ‖ See page 93.

Departments

MATHEMATICS

The required work in mathematics covers the first three years of the course. During this period the subjects pursued are treated with special reference to the demands of the engineering profession. The instruction, while having this end in view, endeavors to train the mathematical faculties so that the student may acquire the ability for research work. On this account, as the course progresses, the method of instruction varies gradually from text-book work to lectures by the instructor.

The extent of the course in the required branches is limited to subjects of importance to engineers: viz., in Algebra (1) the subjects usually found in college algebras previous to the theory of equations; in Trigonometry (3) the ordinary formulæ of relations between angles, and their applications in the solution of right and oblique triangles; in Analytic Geometry (5) the properties of the straight line and the conic sections; in Calculus (7) (8) the most important principles, such as are treated in Osborne's Calculus, supplemented by a course of lectures on the application of the subject to physical and mechanical phenomena; in Differential Equations (9) the solution and geometrical interpretation of total differential equations of first and second orders.

To those who desire additional work in the department of mathematics the following list of electives is offered: Theory of Least Squares (10), and Determinants (11). These subjects are treated so as to render the knowledge of practical value to the engineer. For those pursuing graduate study Vector Analysis (12) and the Theory of the Potential Function (13) are offered as instruments for investigating the more complex physical phenomena.

MATHEMATICS

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
1	Algebra	1	1	3	1	Wren / Whitney	C E M Ch
3	Trigonometry	1	1	3	1	Wren / Whitney	C E M Ch
5	Plane Analytic Geometry	1	2	3	1	Wren / Whitney	C E M Ch
7	Differential and Integral Calculus	2	1, 2	3	1	Wren / Whitney	C E M Ch
8	Applied Calculus	3	1	2	1	Rockwell	C E M
9	Differential Equations	3	2	2	1	Ransom	E M
10	Theory of Determinants	4	1	3	1	Wren	Elective
11	Theory of Least Squares	3	1	2	1	Rockwell	Elective
12	Vector Analysis	4	1	3	1	Wren	Elective
13	Theory of the Potential Function	4	2	3	1	Wren	Elective

DRAWING

The threefold object of the studies pursued in the department of drawing is: first, the acquirement of precision and rapidity in the manipulation of instruments, together with the development of the theory of technical drawing; second, a study of the technique of graphic expression as employed in the modern drafting-room; third, a practical application of the preceding to the investigation of problems susceptible of a graphic solution, including the principles of machine design.

The work in Mechanical Drawing (20) comprises geometrical drawing, the various systems of projection, graphic solution of conic sections, tinting, shading, tracing, the helix and its application to screw-threads and bolts. Lettering and Technical Sketching (23) are taught at the same time as a necessary preparation for machine and topographical drawing.

Descriptive Geometry (21) is taught by means of lectures, recitations, and the graphic solution of a great number of problems. The study includes the elements of warped surfaces.

Mechanism (25) theoretical, and as applied to the delineation of gear-teeth, cams, and other mechanical motions, is designed to involve the minimum of drawing needed to obtain a thorough mastery of the principles.

Machine Drawing (26) is a study of the technique of graphic expression. Detailed and assembly drawings are made from drawings and freehand sketches, but nothing in the nature of a copy is permitted. The work is conducted according to the methods of progressive draftsmen.

Machine Design (28) is begun by the solution of simple problems involving only the elementary principles of applied mechanics, but requiring careful thought, close observation, and good judgment. A systematic training of the judgment is made of first importance. In Advanced Machine Design (29) the student is required to design the parts of simple mechanism from data and sketches only, while in preparation for a thesis he is made responsible for the entire design and detailed drawings.

DRAWING

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
20	Mechanical Drawing	1	1, 2	2	3	Ashley	C E M Ch
21	Descriptive Geometry	1	2	3	1	Anthony / Ashley	C E M Ch
22	* Freehand Drawing	1	1	1	2	Ashley	C E M Ch
23	Technical Sketching	1	2	1	2	Anthony	C E M Ch
25	Mechanism	2	1	3	2	Anthony / Ashley	C E M Ch
26	Machine Drawing	2	2	3	2	Anthony / Ashley	E M Ch
28	Elementary Machine Design	3	2	2	3	Anthony / C. H. Chase	E M
29	Advanced Machine Design	4	1	2	3	Anthony	M

* Not required of students entering College with this subject.

SHOPWORK

Work in the shops is designed to give a practical knowledge of mechanical processes and of materials of construction. Instruction in hand and machine tool-work is given, following a graded series of exercises having in view the formation of habits of precision and the development of judgment essential to the engineer.

The work in this department maintains a close relation with the courses in drawing and design, much of the work in design being carried to completion in the shops from drawings prepared in the drafting-room.

The course for the Freshman and Sophomore years is required of all engineers; that of the Junior and Senior years is elective, except for students of mechanical engineering.

The first half of the Freshman year is spent on Joinery, Wood Turning, and Foundry (Shopwork 40). Joinery gives the elementary use of ordinary bench tools. Wood Turning is carried through straight turning, face plate, and chuck work. Foundry work, which is designed to give the necessary preparation for pattern making, takes up green sand moulding in two- and three-part flasks, with solid or split patterns, green and dry sand cores; also dry sand core making, and casting in soft metals.

Pattern Making (42) includes work on simple and split patterns, built-up work, and core boxes.

Forging (44) is a short course in bending, drawing, upsetting, forming and welding iron, and tool making in steel.

Chipping and Filing, and Machine Tools (45). A short course is given in work at the vise, followed by lathe work, which includes straight and taper turning and fitting, chucking, boring, reaming, and thread cutting; also drilling and planing, shaper and milling-machine work.

Machine Tools (46) includes further instruction in lathe work upon steel and brass, the use of the boring mill, hardening and grinding, and the elements of tool making.

SHOPWORK

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
40	Joinery, Wood Turning, Foundry *	1	1	2	3	Stewart	C E M Ch
42	Pattern Making	1	2	1	3	Stewart	C E M Ch
44	Forging	2	2	1	3	Stewart	C E M
45	Chipping and Filing, Machine Tools	3	1	3	2	C. H. Chase Carter	M
46	Machine Tools	3	2	3	2	C. H. Chase Carter	M

* Joinery, 8 weeks; Wood Turning, 4 weeks; Foundry, 4 weeks.

CHEMISTRY

General Inorganic Chemistry (50) is conducted by means of lectures, recitations, and laboratory work. It comprises theoretical and descriptive inorganic chemistry, and includes a brief account of the carbon compounds and the principal technical processes.

Qualitative Analysis (52) is conducted also by means of lectures and laboratory work. Students, under direction, perform experiments and develop schemes for the division of the metals into groups, and for the separation and detection of the metals in each group. Reactions are written, and analytical details are discussed. Six known solutions and thirteen unknown are correctly analyzed.

Qualitative Analysis (53) is taught by lectures and laboratory work. It includes the treatment of substances to effect solution, detection of mineral acids, and complete analysis of inorganic solids. The work involves the correct analysis of thirteen solid substances.

Quantitative Analysis (61) is mainly taught by laboratory work. The course includes both gravimetric and volumetric methods. The substances analyzed are minerals and salts.

Organic Chemistry (55) is given by lectures and recitations, and covers the general principles of descriptive and theoretical organic chemistry.

Metallurgy (57): lectures and recitations relating to the production, properties, and uses of cast iron, wrought iron, and steel.

Assaying (67), mainly laboratory work, is designed to familiarize the student with the practical methods of sampling and assaying gold, silver, and lead ores.

Gas Analysis (63), including a consideration of technical methods, is conducted by means of laboratory work.

Theoretical Chemistry (69), lectures and recitations, treats somewhat in detail the principal theories of chemical science.

Chemical Engineering (65): lectures, excursions to chemical plants, recitations and laboratory work. The lectures relate to technical applications of inorganic and organic chemistry.

CHEMISTRY

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Preparation Required	Instructor	Course
50	General Chemistry (Chemistry 1)	2	1, 2	2	3		Durkee, Cobb, Smith	C E M Ch
52	Qualitative Analysis (Chemistry 2)	3	1	2	3	50	Durkee	C E M Ch
53	Qualitative Analysis (Chemistry 3)	3	2	2	3	52	Durkee	Ch
55	Organic Chemistry (Chemistry 10)	3	1	3	1	50	Cobb	Ch
57	Metallurgy (Chemistry 8) . . .	3	2	2	1	50	Durkee	Ch
59	Mineralogy . . .	4	1	2	1, 2	53	Richards	Ch
61	Quantitative Anal. (Chemistry 4 & 5)	3 4	1, 2 1, 2	2 2	3 3	50	Durkee	Ch
63	Gas Analysis (Chemistry 9) . .	4	1	1	2	50	Durkee	Ch
65	Chemical Engineering	4	1, 2	2	1	52, 53, 61	Durkee	Ch
67	Assaying (Chemistry 7)	4	2	2	2	50	Durkee	Ch
68	Electro-Chemistry	4	1, 2	3	1	50	Durkee	Ch
69	Theoretical Chemistry (Chemistry 11)	4	2	2	1	50	Cobb	Ch

PHYSICS AND ELECTRICITY

Instruction in Physics (70) is given by lectures, fully illustrated with experiments. The aim is to present the science of physics, not as a series of detached subjects, but as a consistent body of doctrine in which mechanical principles hold throughout, and from which all the various phenomena are deducible.

Physics (71) is a three-hour course of lectures, recitations, problems, and laboratory practice. The elementary principles of theoretical mechanics will be carefully treated in preparation for the work of Physics (72).

Work in the Physical Laboratory (72) comprises the more important quantitative determinations in mechanics, sound, light, and heat, such as the determination of mass, density, elasticity, force of gravity, velocity of sound, pitch, focal length of lenses, index of refraction, wave length of light, candle-power, specific and latent heat, and coefficient of expansion of solids.

Electricity and Magnetism (74) is supplementary to Physics (70), and is required of those who take up the technical and more advanced courses that follow.

In Electrical Laboratory (73), much attention is given to the Wheatstone bridge and the measurement of resistance. Careful study is made of the condenser and the magnetic properties of iron. The candle-power of incandescent lamps, the determination of the constants of recording watt-meters, and the calibration of ammeters and voltmeters receive the attention their importance demands.

The study of Dynamo-Electric Machinery (77), based upon S. P. Thompson's treatise, is very thorough, and is supplemented by the experimental study of machines in the dynamo room.

Great importance is attached to the class making electrical calculations (76), wherein a considerable number of practical problems are presented to the student for solution. These problems embrace a large part of the domain of direct-current work, and include the elementary design of dynamos and motors, and winding-tables for drum armatures.

PHYSICS AND ELECTRICITY

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
70	Physics (Lectures)	1	1, 2	3	1	Dolbear	C E M Ch
71	Physics	2	1	3	1	H. G. Chase	C E M Ch
72	Physical Laboratory	2	2	2	3	H. G. Chase Rollins Munro	C E M Ch
73	Electrical Laboratory	3	1 1 2	1 1 1	4 4 3	Chase Rollins Munro	E
74	Electricity and Magnetism	3	1	3	1	H. G. Chase	E M Ch
76	Electricity (Problems)	3	2	2	1	Rollins	E
77	Dynamo-Electric Machinery	3	2	3	1	Hooper	E
79	Electrical Laboratory	4	1, 2	2	3	Rollins Munro	E

PHYSICS AND ELECTRICITY

The study of Alternating Currents (82 and 83) is carried on during the entire Senior year. The subjects of electro-magnetic induction, simple periodic currents, self and mutual induction, transformers, polyphase currents, and induction motors, are successively treated, both descriptively and mathematically. At the same time the study of alternating current machinery is carried on in Electrical Laboratory (79). The rotary converter and the high-frequency alternator permit the employment of any periodicity up to over one thousand per second. The employment of such high periodicity greatly facilitates the quantitative study of many alternating-current phenomena that are only obscurely exhibited at low frequencies.

Honor students and those electing advanced electrical work read such books as "Alternating Currents," by Bedell and Crehore, "Principles of the Transformer," by Bedell, "Alternating Current Phenomena," by Steinmetz, "Hysteresis in Iron and Other Metals," by Ewing, and have particular investigations assigned them in the laboratory.

In the subject called Electrical Topics (85), each student selects, or has assigned to him, several topics, upon the literature of which he is supposed to inform himself thoroughly, and afterwards to present the fruits of his study in the form of lectures to the class. It is believed that this work will prove of great value in developing the habit of thoughtful reading and in cultivating a just discrimination.

The lectures on the Telegraph and Telephone (87) outline the evolution of these devices and deal comprehensively with the principles involved.

The work in Dynamo Design (88) makes practical application of the principles previously acquired in subject (77). Complete specifications and working drawings of at least one dynamo are prepared by each student.

PHYSICS AND ELECTRICITY

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
82	Alternating Currents	4	1	3	1	Hooper	E
83	Alternating Current Machinery	4	2	3	1	Hooper	E
84	Alternating Currents, Mathematical Treatment	4	1	3	1	Hooper	Elective
85	Electrical Topics	4	2	3	1	Hooper	Elective
86	Magnetism, Theory and Phenomena of .	4	2	3	1	Hooper	Elective
87	Telegraph and Telephone	4	2	1	1	Dolbear	E
88	Dynamo Design	4	1	2	3	Hooper	E
89	Telegraphic Engineering	4	1	3	3	Rollins	Elective

ENGINEERING—CIVIL AND MECHANICAL

Surveying (90, 91) includes principally the elements of general surveying; use in the field of levels, transits, and accessory surveying equipment, intelligible notes, measurement of areas and volumes, location of contours, stadia surveying, miscellaneous field problems, computations, and drawing. Two-thirds of the time is spent in actual field surveying.

Precise Surveying (92) comprises the determination of a true meridian, accurate base-line measurements, a careful system of triangulation, and the adjustment of these various observations by the method of least squares.

Fire Protection Engineering (93) considers water-works, systems of pipes, elevated tanks and stand pipes, fire streams, hydrants, pumps, automatic sprinklers, steam fire-engines, joisted and slow-burning construction of buildings, general order and neatness of industrial plants as affecting fire hazards.

Railroad Surveying (94) includes the field operations required for the preliminary survey, location of curves, turn-outs, switches, and various structures, together with office work based upon the data obtained in the field.

Railroad Engineering (95) is taught by recitations, lectures. and drafting. It includes the study of various curves, switches, and frogs; and takes up such subjects as track work, structures, yards, and methods of making estimates.

Railroads—Economic Location (96) embraces the theory of the location and operation of railroads. Careful study is made of location as influenced by train resistance, traffic, motive-power, cost of construction, and operating expenses, the intention being to give the student comprehensive engineering knowledge of railroad transportation.

Roofs and Bridges (97) is a study of analytical and graphical methods of obtaining the stresses in the modern forms of simple roof and bridge trusses. The comparative merits and economy of the different kinds of trusses are discussed.

Bridge Design (98) is a course in the design of framed structures of wood and steel, and includes actual proportioning of parts, and preparation of detailed drawings.

ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
90	Surveying	2	1	2	3	Sanborn / Tucker	C E M Ch
91	Surveying	2	2	2	3	Sanborn / Tucker	C
92	Precise Surveying	3	1	2	3	Rockwell	C
93	Fire Protection Engineering	3	2	2	1	Sanborn	Elective
94	Railroad Surveying	4	1	2	3	Bray / Tucker	C
95	Railroad Engineering	4	1	3	1	Bray	C
96	Railroads—Economic Location	4	2	3	1	Bray	Elective
97	Roofs and Bridges	3	2	3	1	Rockwell	C
98	Bridge Design	4	2	2	3	Rockwell	Elective

ENGINEERING—CIVIL AND MECHANICAL

Highways (99) considers the location and construction of roads and pavements; properties and varieties of the principal road-building stone, economy of design and construction of broken-stone and other roads.

Contracts and Specifications (100): as treated by Johnson's Contracts and Specifications, Wait's Law of Contracts, and Raymond's Plane Surveying on the Judicial Functions of Surveyors and the Ownership of Surveys.

Hydraulic Measurements (108), a laboratory and field course in hydraulics and hydrography: experiments on contracted and submerged weirs, standard nozzles, Pelton Water Motor, small turbine, duplex pump; river survey by stadia and plane table, and measurements by rod floats and current meter.

Sanitary Engineering (109) comprises a study of the elements of sanitary science, water and its purification, water supply, sewerage, and the disposal of sewage and garbage. Special printed questions and exercises are issued that require the student to become familiar with up-to-date engineering reports and treatises on these subjects.

Hydraulics (110), theoretical and applied, includes the laws relating to the pressure and flow of water in pipes, discharge over weirs and through tubes and conduits, and embraces the measurement and development of water power and the construction and design of water wheels.

Masonry (111) comprises a study of the physical properties of cement, brick, building stone and concrete, including the principles employed in designing foundations, arches, and buildings, in ordinary masonry and reinforced concrete.

Mechanics (112) treats of problems that develop the principles of work, force, and motion. About two hundred problems are solved, and an effort is made to combine theoretical principles with actual conditions.

Applied Mechanics (113) is a continuation of (112). Particular attention is given to the strength of materials and of structures. Throughout the work numerous practical problems illustrate the principles considered.

Applied Mechanics (114) is an advanced subject, open only to students who have passed satisfactorily in (112) and (113).

ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
99	Highways	3	2	2	1	Tucker	Elective
100	Contracts and Specifications	3	1	1	1	Sanborn	Elective
108	Hydraulic Measurements	3	2	2	3	Sanborn	C
109	Sanitary Engineering	4	1	2	3	Sanborn Tucker	C
110	Hydraulics	4	2	3	1	Sanborn	C E M Ch
111	Masonry	1, 4	2	3	1	Rockwell	C
112	Mechanics	3	1	3	1	Sanborn	C E M Ch
113	Applied Mechanics	3	2	3	1	Bray	C E M Ch
114	Applied Mechanics	4	1	3	1	Bray	Elective

ENGINEERING—CIVIL AND MECHANICAL

In Experimental Mechanics (115) problems are set that require for analysis personal experimentation and correct application of the principles of mechanics. Action of forces in wood and metals is observed, and illustrative tests are made.

Structural Design (117) is an introduction to the subject of design of structures. Simple problems in foundations, wooden roof framing, and riveted connections are thoroughly discussed in class, after which the students make the necessary computations and drawings.

Structural Design (118) is an advanced course in continuation of (117). It is essentially a course in the engineering details of building design.

In Steam Engine (120) the study of the fundamental principles involved in the generation of steam is followed by their application to engine details. The theory of the indicator is taught, and applied to the making of simple tests.

Steam Engineering (121) includes the thermo-dynamics of the steam engine and other heat engines, together with the study of various types of valve gears.

Steam Engineering (122) includes problems relating to the design and construction of steam engines, involving the strength and proportion of parts, the consideration of multiple-expansion engines, and steam boilers.

Engineering Laboratory (123) includes the adjustment and use of indicators and calorimeters, gauge testing, and drill in engine tests.

Engineering Laboratory (124): the measurement of power by brakes and dynamometer, oil and bearing-metal testing, and tests of steam and gas engines and boilers.

Engineering Topics (128) is essentially library work, and requires the preparation of papers upon subjects assigned for presentation before the class.

Thesis (135). The thesis prepared by each candidate for a degree in engineering requires at least one hundred and twenty hours of preparation. A single topic is developed by extended personal research, design, or experimentation.

ENGINEERING—CIVIL AND MECHANICAL

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
115	Experimental Mechanics	3	1	1	3	Sanborn	C E M Ch
117	Structural Design	3	2	2	3	Rockwell	M
118	Structural Design	4	1	2	3	Rockwell	C
120	Steam Engine	3	1	3	1	C. H. Chase	Elective
121	Steam Engineering	3	2	3	1	Bray	C E M Ch
122	Steam Engineering	4	1	3	1	Bray	M
123	Engineering Laboratory	3	2	2	3	C. H. Chase	M
124	Engineering Laboratory	4	1, 2	2	3	C. H. Chase	M
128	Engineering Topics	4	1	3	1	Bray	M
135	Thesis	4	2	3			C E M Ch

ENGLISH

English is required during the Freshman year, the aim being to help the student in developing the power of thinking for himself and expressing his thoughts accurately, clearly, and interestingly. In addition, elective subjects are offered in advanced composition and literature.

Each subject is presented by lectures and weekly or bi-weekly conferences, and in all cases the work required of the student includes both reading and writing. Written work in other subjects will also be examined by the English department, as a test of the student's ability to express himself clearly and correctly; and theses, so far as possible, will be subject to criticism by the department of English before they are finally accepted by the department for which they are written.

English (140) is a general introduction.

English (141) is a study of expression.

English (142) is a brief historical survey of English literature.

English (143): principles of technical writing.

English (144): advanced general composition.

English (145): advanced technical writing.

The following subjects given in the College of Letters are also approved electives:—

English (151) [10]: The English Bible.

English (152) [15]: Prose of the Nineteenth Century. Lectures, reading, brief critical essays.

English (153) [16]: Milton and his time. Lectures, readings, brief critical essays.

English (154) [18]: Shakespeare. Reading of selected plays, lectures, brief critical essays.

ENGLISH

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
140	English	1	1	2	1	Earle	C E M Ch
141	English	1	2	3	1	Whittemore	C E M Ch
142	English	2	2	3	1	Earle	Elective
143	English	2 or 3	2	1	1	Earle	Elective
144	English	2 or 3	1	1	1	Earle	Elective
145	English	3 or 4	1 or 2	1	1	Earle	Elective
*151	English 10		1, 2	3	1	Whittemore	Elective
*152	English 15		1, 2	3	1	Whittemore	Elective
†153	English 16	3	1	3	1	Whittemore	Elective
*154	English 18	4	2	3	1	Whittemore	Elective

MODERN LANGUAGES

For admission to the Engineering Department, an elementary knowledge of French or German (see pages 47, 48,) is required. Students failing to receive credit for this may enter French (160). Those who have fulfilled the conditions stated on page 51-53, will be given advanced credit.

Students who have fulfilled the regular entrance requirements will continue the language offered during the Freshman year.

Those who have received advanced credit will continue the language offered during one half of the Freshman year, taking, in French, (162) or (163), in German, the first or second half of (167).

Electives for those who have completed the requirements in French are provided by two half-year subjects: French (162) will include some scientific reading, modern fiction, and drama; French (163) deals with authors and works of the 19th century.

POLITICAL ECONOMY

Political Economy (180), designed especially for students of engineering, aims at a systematic and comprehensive study of the elements of economics, and comprises work in some of the more important problems of modern industrial society.

Political Economy (185), Money, Credit, and Banking: an historical course, with special reference to the financial experience of the United States.

Political Economy (186) is a study of the modern organization of labor: an account of the growth, methods, and aims of modern associations of wage earners. In the second part of the work are treated the theory and history of commercial crises in England, France, Germany, and the United States during the nineteenth century.

PHYSICAL TRAINING

The aim of the department is to secure a more symmetrical development of the body, and a fuller appreciation of the value of systematic exercise. Special work is prescribed for each student, depending on his physical condition, and work is also conducted in classes.

No.	Subject	Year	Term	Exercises per Week	Length of Exercise	Instructor	Course
MODERN LANGUAGES							
160	French, Elementary		1 2	5 4	1	Earle Hayden	
161	French, Intermediate	1	1, 2	3	1	Hayden	C E M Ch
162	French, Advanced	2	1	3	1	Hayden	Elective
163	French, Advanced	2	2	3	1	Hayden	Elective
165	German, Elementary		1, 2	3	1	Reed	
166	German, Intermediate	1	1, 2	3	1	Reed	C E M Ch
167	German, Advanced	2	1, 2	3	1	Fay	Elective
171	Spanish	2 or 3	1, 2	3	1	Earle	Elective
OTHER SUBJECTS							
180	Political Economy	4	1	3	1	Metcalf	C E M Ch
185	Political Economy	4	2	3	1	Metcalf	Elective
186	Political Economy	4	2	3	1	Metcalf	Elective
190	Physical Training	1, 2	1, 2†	3	1	Lewis	C E M Ch

† From the middle of November to the middle of March.

TABULAR PROGRAM, FIRST HALF-YEAR

The prefixed *a*, *b*, *c*, signify divisions

MONDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR	PlEc 180	ApMch 114	StEn 122 *RfBr 97	Geo 130 †SyEn 109	*EnLb 123 †EnLb 124 Chm 63 Chm 61
JUNIOR	*a*StEn 120 *b*Mch 112	*b*StEn 120 *a*Mch 112	*b*MSh 45	*b*MSh 45	*a*ExMch 115 *b*ElLb 73 *2 to 6* *b*PSv 92
SOPH	Phs 71	*a*Sv 90	*a*Sv 90 Hst	*a*Sv 90 Eng 144 Eng 152	*c*Sv 90 *2 to 6*
FRESH	*a*Tr 3 *b*Frn 161 Ger 166	*b*Tr 3 Ger 165 Frn 160	Phs 70	*c*Tr 3 *a*Frn 161 AlgB-P	*c*Dwg 20 *b*Sh 40

WEDNESDAY

SENIOR	PlEc 180	ApMch 114	StEn 122 *RfBr 97	Geo 130 †SyEn 109	MDn 29
JUNIOR	*a*StEn 120 *b*Mch 112	*b*StEn 120 *a*Mch 112	*b*MSh 45	*b*MSh 45	*c*ExMch 115 *a*PSv 92
SOPH	Phs 71	*a*Sv 90	*a*Sv 90 Hst	*a*Sv 90 Eng 152	Chm 50
FRESH	*a*Tr 3 *b*Frn 161 Ger 166	*b*Tr 3 Ger 165 Frn 160	Phs 70	*c*Tr 3 *a*Frn 161 AlgB-P	*c*Dwg 20 *b*Sh 40

FRIDAY

SENIOR	PlEc 180	ApMch 114	StEn 122 *RfBr 97	Geo 130 †SyEn 109	MDn 29 Chm 61
JUNIOR	*a*StEn 120 *b*Mch 112	*b*StEn 120 *a*Mch 112	*b*MSh 45	*b*MSh 45	*b*ExMch 115 *a*ElLb 73 *2 to 6* *a*PSv 92
SOPH	Phs 71	*c*Sv 90	*c*Sv 90 Hst	Eng 152	Chm 50
FRESH	*a*Tr 3 *b*Frn 161 Ger 166	*b*Tr 3 Ger 165 Frn 160	Phs 70	*c*Tr 3 *a*Frn 161 Alg B-P	*b*Dwg 20 *a*Sh 40 *2 to 6*

* 1905-1906 only. † After 1905-1906.

TABULAR PROGRAM, FIRST HALF-YEAR

The prefixed *a*, *b*, *c*, signify divisions

TUESDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR	El 82 REn 95	ElLb 79 RSv 94	ElLb 79 RSv 94	ElLb 79 RSv 94	DyDn 88 StDn 118
JUNIOR	*a*Cal 8 Chm 55	*b* Cal 8 *a*MSh 45 CS 100	*a*MSh 45 Min 59 Eng 153	ElMg 74 Min 59	Chm 52
SOPH	*a*Cal 7 Ger 167	*b*Cal 7 Frn 162 †Spn 171	Mchm 25	Mchm 25	*b*Sv 90
FRESH	*c*Alg 1 *b*Dwg 20	*a*Alg 1 *b*Dwg 20 Gm B-P	*b*Alg 1 Frn 160	Eng 140	*a*Dwg 20 *c*Sh 40

THURSDAY

SENIOR	El 82 REn 95	ElLb 79 RSv 94	ElLb 79 RSv 94	ElLb 79 RSv 94	DyDn 88 StDn 118
JUNIOR	*a* Cal 8 Chm 55	*b*Cal 8 *a*MSh 45	*a*MSh 45 Min 59 Eng 153	ElMg 74 Min 59	Chm 52
SOPH	*a*Cal 7 Ger 167	*b*Cal 7 Frn 162 †Spn 171	Mchm 25	Mchm 25	*b*Sv 90
FRESH	*c*Alg 1 *a*Sh 40	*b*Alg 1 *a*Sh 40 GmB-P	*a*Alg 1 Frn 160	Eng 140	*a*Dwg 20 *c*Sh 40

SATURDAY

SENIOR	El 82 REn 95	*EnLb 123 †EnLb 124	*EnLb 123 †EnLb 124	*EnLb 123 †EnLb 124	
JUNIOR	Chm 55 *b*PSv 92	*b*PSv 92 *a*MSh 45	*b*PSv 92 *a*MSh 45 Min 59 Eng 153	ElMg 74 Min 59	
SOPH	*a*Cal 7 Ger 167	*b*Cal 7 Frn 162 †Spn 171	Mchm 25	Mchm 25	
FRESH	*c*Alg 1 *a*FDwg 22	*b*Alg 1 *a*FDwg 22 GmB-P	*a*Alg 1 *b*FDwg 22	*b*FDwg 22 EngB-P	

* 1905-1906 only.

† Not given in 1905-1906.

TABULAR PROGRAM, SECOND HALF-YEAR

The prefixed *a*, *b*, *c*, signify divisions

MONDAY

	8:45	9:45	10:45	11:45	2 to 5
SENIOR		El 83 Msy 111	ElTp 85 EnTp 128	Hyd 110	Chm 61
JUNIOR	DEM 77	StEn 121	MSh 46	MSh 46 ElPb 76	Chm 61 *b*ElLb 73 *2 to 6* EnLb 123
SOPH	*b*PhsLb 72 *c*FSh 44 *a*Sv 91	*b*PhsLb 72 *c*FSh 44 *a*Sv 91	*b*PhsLb 72 *c*FSh 44 *a*Sv 91 Hst	Eng 142 Eng 152	*a*FSh 44 *c*Sv 91
FRESH	*a*Anlt 5 *b*Frn 161 Ger 166	*b*Anlt 5 Ger 165 Frn 160	Phs 70	*c*Anlt 5 *a*Frn 161	*c*Dwg 20 *a*Dwg 23

WEDNESDAY

SENIOR		El 83 Msy 111	ElTp 85 EnTp 128	Hyd 110	EnLb 124
JUNIOR	DEM 77	StEn 121	MSh 46 Chm 57	MSh 46 ElPb 76	*a*,*b*ElLb 73 StDn 117
SOPH	*b*PhsLb 72 *a*Sv 91	*b*PhsLb 72 *a*Sv 91	*b*PhsLb 72 *a*Sv 91 Hst	Eng 142 Eng 152	Chm 50
FRESH	*a*Anlt 5 *b*Frn 161 Ger 166	*b*Anlt 5 Ger 165 Frn 160	Phs 70	*c*Anlt 5 *a*Frn 161	*c*Dwg 20 *a*PSh 42

FRIDAY

SENIOR		El 83 Msy 111	ElTp 85 EnTp 128	Hyd 110	Chm 61 EnLb 124
JUNIOR	DEM 77	StEn 121	MSh 46 Chm 57	MSh 46	Chm 61 *a*ElLb 73 *2 to 6* StDn 117
SOPH	*b*FSh 44 *c*Sv 91	*b*FSh 44 *c*Sv 91	*b*FSh 44 *c*Sv 91 Hst	Eng 142 Eng 152	Chm 50
FRESH	*a*Anlt 5 *b*Frn 161 Ger 166	*b*Anlt 5 Ger 165 Frn 160	Phs 70	*c*Anlt 5 *a*Frn 161	*b*Dwg 23

† After 1905-1906.

TABULAR PROGRAM, SECOND HALF-YEAR

The prefixed *a*, *b*, *c*, signify divisions

TUESDAY

	8:45	9:45	10:45	11:45	2 to 5
Senior	PlEc 185	ElLb 79 PlEc 186	ElLb 79	ElLb 79 REn 96	BrDn 98 Chm 57
Junior	*a*ApMch 113 *b*Chm 69	*b*ApMch 113 FPEn 93	DfEq 9 Hghs 99	RfBr 97	HdyM 108 MDn 28 Chm 53
Soph	*a*Cal 7 Ger 167	*b*Cal 7 Frn 163 †Spn 171	MDwg 26	MDwg 26	*a*,*c*PhsLb 72 *b*Sv 91
Fresh	*a*DsGm 21	*b*DsGm 21	 GmB-P	Eng 141	*a*Dwg 20 *c*PSh 42

THURSDAY

Senior	PlEc 185	ElLb 79 PlEc 186	ElLb 79	ElLb 79 REn 96	BrDn 98 Chm 67
Junior	*a*ApMch 113 Chm 69	*b*ApMch 113 FPEn 93	DfEq 9 Hghs 99	RfBr 97	HdyM 108 MDn 28 Chm 53
Soph	*a*Cal 7 Ger 167	*b*Cal 7 Frn 163 †Spn 171	MDwg 26	MDwg 26	*a*,*c*PhsLb 72 *b*Sv 91
Fresh	*a*DsGn 21	*b*DsGm 21	 Frn 160	Eng 141	*a*Dwg 20 *b*PSh 42

SATURDAY

Senior	PlEc 185	Ths 135 PlEc 186 Tel 87	Ths 135	Ths 135 REn 96	
Junior	*a*ApMch 113	*b*ApMch 113 EnLb 123	EnLb 123	RfBr 97 EnLb 123	
Soph	*a*Cal 7 Ger 167	*b*Cal 7 Frn 163 †Spn 171	MDwg 26	MDwg 26	
Fresh	*a*DsGm 21	*b*Ds Gm 21	 GmB-P	Eng 141	

† After 1905-1906.

THE GRADUATE DEPARTMENT

Faculty of the Graduate Department

FREDERICK W. HAMILTON, A.M., D.D., ACTING PRESIDENT

J. STERLING KINGSLEY, SC.D., DEAN
Professor of Biology

HARRY G. CHASE, B.S., SECRETARY

CHARLES E. FAY, LITT.D.
Wade Professor of Modern Languages

ARTHUR MICHAEL, A.M., PH.D.
Professor of Chemistry

WILLIAM L. HOOPER, A.M., PH.D.
Professor of Electrical Engineering

ARTHUR E. AUSTIN, A.B., M.D.
Professor of Medical Chemistry

DAVID L. MAULSBY, A.M.
Professor of English Literature

GEORGE VAN NESS DEARBORN, A.M., PH.D., M.D.
Professor of Physiology

WILLIAM K. DENISON, A.M.
Professor of the Latin Language and Literature

LAWRENCE B. EVANS, PH.D.
Professor of History

HENRY C. METCALF, PH.D.
Jackson Professor of Political Science

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

FRANK G. WREN
Walker Professor of Mathematics

STANDING COMMITTEES OF THE GRADUATE DEPARTMENT

EXECUTIVE: Professor Kingsley, *Chairman*; Professors Hooper and Denison.

REQUIREMENTS FOR DEGREES: Professor Kingsley, *Chairman*; Professors Evans and Michael.

The Graduate Department

INSTRUCTION

Graduate instruction is given by members of the General Faculty. The advanced elective work offered to undergraduates in any department of the College of Letters is open to graduate students, and will count for the degree of Master of Arts, on condition that it be not counted for any other degree.* Additional courses still more advanced may be arranged with the instructor in whose department the work is to be done.

DEGREES

The degrees offered are Master of Arts, Master of Science, and Doctor of Philosophy. Departments at present open to candidates for the degree of Master of Arts are:—

English,	Mathematics,
Modern Languages,	Chemistry,
Ancient Languages,	Physiological Chemistry,
History and Public Law,	Biology,
Political Science,	Physiology,
	Electricity.

The degree of Doctor of Philosophy is offered in Chemistry, in Biology, and in History and Public Law.

The degree of Master of Science is offered in Biology, in Chemistry, and in Engineering.

The Degree of Master of Arts will be conferred upon graduates of Tufts College who have received the degree of Bachelor of Arts, or upon graduates of other colleges whose course of study has been equivalent to that required at Tufts College for the degree of Bachelor of Arts, upon the following conditions:—

1. They shall have completed an approved course of advanced study, including the equivalent of at least thirty term hours, in one or at the most two departments. If two departments are chosen they should be allied, and should occupy the relation of major and subsidiary department.

* Students doing work in undergraduate classes are required to take the regular final examination with these classes.

2. This course shall be pursued during a residence of not less than one year. The condition of residence may be waived by special permission, but in this case the degree cannot be taken with less than two years of graduate study.

3. The candidate shall prepare a thesis and pass a satisfactory examination before a board of three examiners, appointed by the Graduate Faculty at its May meeting. The thesis must be presented at least one month before Commencement.

4. No subject counted for the first degree will be counted for the second degree.

5. Students taking the degree at the end of a four years' course of study must have complied with the requirement as to standing governing those who receive the degree of A.B. at the end of three years; that is, an average standing of Grade B, or higher, must have been attained on the entire work of the course.

6. Candidates for this degree must make a written application to the Graduate Faculty before October 1 of the college year in which the degree is to be conferred, and if the degree is not taken after one year of study they must also give a second notice three months before receiving the degree. This application shall indicate the department or departments in which it is proposed to pursue work for a degree.

Graduates of Tufts College who have taken the degree of Bachelor of Philosophy, or graduates of other colleges holding a degree of similiar grade, must complete the requirement for the degree of Bachelor of Arts before they can be entered as students in courses leading to the degree of Master of Arts.

THE DEGREE OF MASTER OF SCIENCE will be conferred upon Bachelors of Science who shall satisfactorily pursue advanced professional study at Tufts College for one year, under the conditions required of candidates for the degree of Master of Arts; or who shall present suitable evidence of three years of professional work, one year of which must be in a position of responsibility, in which case a certain amount of professional study will be assumed. A thesis based upon this study will be required.

THE DEGREE OF DOCTOR OF PHILOSOPHY will be conferred upon Bachelors of Arts, Philosophy, or Science who shall have completed at least three years of graduate study, two years of which must be in residence, subject to certain conditions, which are enumerated below (pages 166, 167) in connection with the

several departments. This degree will not be conferred simply on the ground of the completion of the required course of study. High attainment is necessary, and especially the power of original thought and independent investigation.

The whole course of study must be devoted to one subject, and a thesis must be presented giving evidence of original research. Other special requirements may be made by the instructors in charge of the work of the candidates. Each candidate must pass a satisfactory examination before a board of three examiners appointed by the Graduate Faculty.

The thesis must be ready at least one month before Commencement, at which time the student must make written application to the Secretary to be considered as an applicant for the degree.

THE DEGREE OF MASTER OF ARTS may be taken by candidates for the degree of Doctor of Philosophy at the end of their first year of study, or it will be conferred together with the latter degree.

DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF MASTER OF ARTS

ENGLISH.—It is assumed that candidates for the degree of Master of Arts in English will have already laid a good foundation in English composition and the history of English literature. The amount of work expected is roughly indicated by that required of a major student in English at this College. When not anticipated in undergraduate work, the subjects numbered 7*, 10, 17, 18, 19, 20, 23, 25, 26, and 28, may be counted towards the Master's degree, provided that the work done distinctly surpasses in quality that required of undergraduates. On the other hand, a part of the work or the entire work for the advanced degree may consist of a special course of study, undertaken under the direction of the department. Such special work must be of creative or investigative order. It may take the form of discussion of some question in literary history or literary criticism. It may consist of the intensive study of an

* See "Departments of Instruction," pages 64 to 66.

author or a period. Frequently the use of German and French is necessary.

MODERN LANGUAGES.—The extended undergraduate courses offered in Modern Languages enable the candidate for the degree of Bachelor of Arts who specializes in this department to cover the work formerly required for the Master's degree. For those who have not taken the more advanced subjects, the department offers a full graduate course leading to the degree of Master of Arts. The work is performed in existing undergraduare classes. To enter upon this course, the candidate must have completed the equivalent of six of the Modern Language subjects, including 1 and 3 * in both German and French. Of elementary subjects only Italian may be taken, by such as have had the equivalent of two years of French. Graduate students whose special work is being performed in other departments are admitted to such classes in German and French, beyond subject 1, as their proficiency will warrant.

ANCIENT LANGUAGES. — Candidates for the degree of Master of Arts in Greek or Latin must have completed, for Greek, courses 1, 2, 3, and 4 or 5; for Latin, courses 1, 2, 3 or 4, and 5, or equivalents.† It is desirable that candidates for this degree in either of the ancient languages present the other as a minor subject. Exceptional cases will be treated in accordance with the varying circumstances. Greek 4, 5, 7, 8, and 9, Latin 3, 4, 6, 7, 8, 9, 10, and Classical Archæology 1, 2, 3, 4, 5, and 6, so far as these have not been anticipated as undergraduate work, may be counted towards the Master's degree. Graduate students will be expected to do work of an advanced character, either in classes with undergraduates or on special lines of investigation assigned by the instructors. The required thesis, on an approved topic, must embody the results of the investigation of some author or period, or of some philological or archaeological subject. A reading knowledge of French and German is indispensable.

* See "Departments of Instruction," pages 67 to 70.

† See "Department of Instruction," pages 70 to 74.

HISTORY AND PUBLIC LAW.—Before beginning graduate work in History and Public Law every student must have completed History 1 and 2, and Philosophy 1 or 2, or their equivalent.* The advanced subjects enumerated in the catalogue, in so far as they are suited to the needs of the candidate, may be offered for the higher degrees, but it is expected that much of the candidate's work will consist of special work pursued under the direction of the department.

For the degree of Master of Arts, a working knowledge of French is essential. A similar knowledge of German is desirable, and in some cases may be necessary. In addition to the subjects required for the degree candidates will be expected to do something in the way of an independent investigation of a definite subject, the result to be embodied in a thesis.

POLITICAL SCIENCE.—The degree of Master of Arts in Political Science is conferred on graduates of Tufts College who pursue successfully one year of resident graduate study. Bachelors of Arts of other colleges must satisfy the department that they are qualified by previous training to enter upon the desired course of study, and show the results of a year's resident graduate work with high credit. A good reading knowledge of French and German is desirable, and may in certain lines of work be necessary. Before receiving the degree all candidates are expected to sustain a final oral examination, and give evidence by a thesis of their ability to do work of the investigative order. In addition to the regular advanced work offered by the department, special subjects giving opportunity for original investigation will be outlined for candidates wishing to pursue them.

MATHEMATICS.— Graduate students in Mathematics must have acquired a working knowledge of the calculus, and may offer as part of their work for the Master's degree any of the subjects given by the department except the first six, but subjects 7, 9, and 10, or their equivalents, must be included.† Candi-

* See "Departments of Instruction," pages 78 to 81.

† See "Departments of Instruction," page 84, 85.

dates will hold themselves in readiness to be examined at the end of their studies upon any topics treated in subjects 3 to 6 inclusive, as well as upon work offered for the degree.

CHEMISTRY.—The requirements for beginning graduate work in Chemistry are the completion of two years' work in General Chemistry, Basic and Acid Qualitative Analysis, and the outlines of Organic Chemistry (subjects 1, 2, 3, and 10 of Tufts College, or their equivalent).*

To obtain the degree of Master of Arts the applicant must have done satisfactory work in at least five of the subjects, numbered 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, and 15, and must also present a satisfactory thesis and pass a satisfactory examination in all the subjects studied.

PHYSIOLOGICAL CHEMISTRY. — The work in Physiological Chemistry requires in preparation a thorough foundation in inorganic and organic chemistry, including qualitative and quantitative analysis; the ability to read scientific French and German readily; and a thorough knowledge of the elements of physics, particularly with reference to the laws of the density of gases and fluids under heat and pressure, as well as such acquaintance with optics as will enable one to use intelligently the polariscope, the spectroscope, and the microscope.

The course is one of laboratory work wholly, under the personal advice and assistance of the instructor, and must include one original investigation, to require not less than one half-year, and to be accompanied by a satisfactory thesis upon the results of such research, The subject of this investigation may be taken from the realm of enzymes, metabolism, or hygiene. A rigid examination will also be demanded upon the principles of physiological chemistry.

PHYSIOLOGY.—Before beginning graduate work in Physiology the candidate for the degree of Master of Arts must have had at least a year's training in biology, and, besides, a knowledge of the outlines of anatomy and physiology such as may be obtained from such works as Martin's Human Body, with

* See "Departments of Instruction," pages 87 to 90.

simple laboratory experiments. A reading knowledge of French and German is desirable, and in some cases may be necessary. The work of the year is largely practical. It involves the completion of the work in physiology required of candidates for the degree of Doctor of Medicine, and, in addition, the investigation of some simple problem which shall serve as the basis of the required thesis.

BIOLOGY.—Before beginning graduate work in Biology the student must have a good knowledge of the elements of vertebrate and invertebrate anatomy and of physiology (subjects 1 to 4 of Tufts College, or their equivalent), and must be able to use French and German.* The work offered for advanced degrees is in the lines of comparative anatomy and of the histology and embryology of animals. Consequently the greatest stress will be laid upon laboratory work, but students may also take the subjects numbered 5, 6, 8, and 9.

For the degree of Master of Arts or Master of Science the student must pass a satisfactory examination in the principles of morphology, and present an acceptable thesis embodying the result of research.

ELECTRICITY.—As a preparation for graduate work in Electricity the candidate must have a thorough mathematical foundation, including differential equations, and a good knowledge of physics, including elementary electrical tests (Physics 1 to 5† of Tufts College, or an equivalent). Unless these requirements be met upon beginning graduate work, it will scarcely be possible to obtain the master's degree in one year.

The graduate work will include the satisfactory completion of subjects 77, 79, 82, 84, and 88,† and the preparation of an acceptable thesis involving original research.

* See "Departments of Instruction," page 90 to 92.

† See "Departments of Instruction," pages 84 to 87, and page 97.

DEPARTMENTS OPEN TO CANDIDATES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

CHEMISTRY.—To obtain the degree of Doctor of Philosophy the candidate must have at the beginning a good working knowledge of German. He must (unless previously qualified) take subjects 4 to 7, 9 to 15, and 17, and devote at least a year to subject 16.* Examinations in the above subjects must be satisfactorily passed, and an acceptable thesis, embodying an original investigation in Chemistry, must be presented.

BIOLOGY.—Candidates must have a good working knowledge of French and German before beginning their work. They must carry on research in animal morphology for at least three years, two of which must be in residence. They must also have passed one summer at some sea-shore biological station. They must pass an examination on general zoology, embracing not only the fundamental facts of morphology and classification, but the more prominent philosophical views as well. Each candidate must present an acceptable thesis embodying original research, with an adequate discussion of the bearings of the facts discovered, and of the views of previous writers on the same subject.

HISTORY AND PUBLIC LAW.—Every candidate for the degree of Doctor of Philosophy in History and Public Law will be expected to possess a working knowledge of French and German. Before beginning his graduate work, he should have completed History 1, 2, and 3, and Public Law 1.† For the attainment of the degree he is expected to show

(1) A general knowledge of the whole field of mediaeval and modern history. This knowledge is expected to involve a comprehension of the significance of events and institutions rather than a familiarity with details.

(2) An intimate acquaintance with the history of a limited period. Here the candidate is expected to have a detailed knowledge of the events and institutions of the period selected, together with a critical knowledge of the literature bearing upon it.

(3) A critical knowledge of the leading writers upon mediaeval and modern history.

* See "Departments of Instruction," pages 87 to 90.

† See "Departments of Instruction," pages 78 to 81.

(4) Power of research, as evidenced by the preparation of a thesis. The thesis must be exhaustive, must constitute a contribution to the field of human knowledge, and must be in a form suitable for publication. The preparation of the thesis will require the greater part of the candidate's time for one year.

Due credit will be allowed for graduate work done in other institutions.

FELLOWSHIPS

THE OLMSTEAD AND MINER FELLOWSHIPS IN NATURAL HISTORY.—In accordance with the spirit of the gift of the late Charles Hyde Olmstead, of Hartford, Conn., the Trustees have established two fellowships in Natural History, to be known respectively as the Olmstead and the Miner Fellowship. The income of these fellowships, amounting to two hundred and fifty dollars annually each, is awarded by the Trustees to graduate students in Natural History, upon recommendation of the Administrative Board. The conditions of the fellowships are as follows:—

(1) The application must be made in writing before May 1, addressed to the President of the College. It must contain evidence of a liberal education, and of ability to profit by the work to be done, as well as testimonials of good character from instructors or others. Any original article, either written or printed, is an aid in ascertaining the attainments of the candidate.

(2) The holder of the fellowship will be expected to devote himself to the prosecution of some special subject, under the direction of the professor in charge of the department of Natural History. He may be called upon for minor services, such as conducting examinations, but he shall not be called upon to teach. He may, however, at his own option, and with the approval of the President, give instruction by lectures or otherwise to persons connected with the College, but not elsewhere.

(3) The payments will be made half in January and half in June; but, in case of resignation or removal from the fellowship, payment will be made only for the time it is actually held. The holder of the fellowship is not exempt from the payment of tuition.

(4) Residence is a condition of holding either of these fellowships.

The holder of a fellowship may be eligible to a single re-election, but incumbency constitutes no claim to re-appointment.

SCHOLARSHIPS

The Trustees of Tufts College have established eleven scholarships, one in each department offering graduate work. Each scholarship gives free tuition to the incumbent, who is expected to devote himself exclusively to advanced study.

These scholarships are awarded by the Graduate Faculty, on recommendation of the heads of departments concerned, at or before the beginning of the year in which they are to be conferred. Applications must be made to the President on or before May 1 of the preceding year, and will regularly be acted upon at the June meeting of the Graduate Faculty.

TUITION

The tuition fee for the whole course for the degree of Master of Arts, or Master of Science, is *one hundred dollars*, of which *fifty dollars* is payable in advance.

The tuition fee for candidates for the degree of Doctor of Philosophy is *one hundred dollars* for each year spent at the College, of which *fifty dollars* is payable in advance each year.

The requirement of bonds stated in this catalogue, under "Expenses," applies to all students of the College, graduate as well as undergraduate.

THE DIVINITY SCHOOL

Faculty of the Divinity School

FREDERICK W. HAMILTON, A.M., D.D., ACTING PRESIDENT

CHARLES H. LEONARD, A.M., D.D., DEAN
Goddard Professor of Homiletics and Pastoral Theology

HARRY G. CHASE, B.S., SECRETARY

WILLIAM R. SHIPMAN, A.M., D.D., LL.D.
Goldthwaite Professor of Rhetoric, and Professor of Logic

EDWIN C. BOLLES, PHD., D.D., LL.D.
Dickson Professor of English and American History

WILLIAM G. TOUSEY, A.M., D.D.
Ryder Professor of Ethics and the Philosophy of Theism

GEORGE T. KNIGHT, A.M., D.D.
Packard Professor of Christian Theology

GEORGE M. HARMON, A.M., D.D.
Professor of Biblical Theology

WARREN S. WOODBRIDGE, A.M., B.D.
Woodbridge Professor of Applied Christianity

J. STERLING KINGSLEY, Sc.D.
Professor of Biology

HERBERT E. CUSHMAN, B.D., A.M., PHD.
Professor of Philosophy

DAVID L. MAULSBY, A.M.
Professor of English Literature and Oratory

THOMAS WHITTEMORE, A.B.
Professor of English

HENRY C. METCALF, A.B., Ph.D.
Jackson Professor of Political Science

LAWRENCE B. EVANS, PH.D.
Professor of History

CHARLES ST. CLAIR WADE, A.M.
Professor of the Greek Language and Literature

CHARLES B. LEWIS
Director of the Gymnasium

NON-RESIDENT LECTURERS

HENRY W. RUGG, D.D.
The Missionary Principle and Work

DWIGHT M. HODGE, D.D.
The Preacher's Use of the Bible

CHARLES ELLWOOD NASH, D.D.
Qualifications for Ministerial Power

HAROLD WILLIAMS, A.M., M.D.
The Care of the Body

COMMITTEE ON PROMOTIONS

Dean Leonard, *Chairman;* Professors Metcalf and Woodbridge.

The Divinity School

The Divinity School is one of the co-ordinate departments of Tufts College. Students of the School are members of the College, enjoying its privileges and subject to its regulations.

CONDITIONS OF ADMISSION

1. The Divinity School is open on equal terms to students of every denomination of Christians. Candidates unknown to the Faculty must present satisfactory testimonials as to character.

2. Bachelors of Arts whose course of study has included Greek are admitted to a three years' course without examination, as candidates for the degree of Bachelor of Divinity. Graduates holding other literary degrees than that of A. B. may be required to pass an examination in the subjects in which their college course differs from the A. B. course.

3. Undergraduates who enter for a degree must conform to the regular conditions of admission to the College of Letters as stated above, see pages 45 to 58.

4. Special students, not candidates for a degree, may be admitted, in accordance with the general custom of the College, to such departments of the regular work of the School as they are fitted to undertake.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF DIVINITY

The College of Letters has decided that certain studies, hitherto pursued in the Divinity School only, are properly regarded as culture studies, and therefore offers them to all its students. Taking advantage of this fact, the student who enters College with Greek, and with other good preparation, may so

shape his course as to obtain the degree of Bachelor of Arts in four years, and that of Bachelor of Divinity in one more year.

Graduates from other institutions may obtain the degree of Bachelor of Divinity after having completed those parts of the course of this School which have not been included in their previous studies. The time thus required for those holding the degree of A.B. is three years or less.

In all cases, however, the ground of promotion and of graduation is the intellectual attainment of the individual student, and not a fixed requirement of a certain number of years of study, except that no degree will be granted for less than one year of resident work.

SYNOPSIS OF THE REQUIREMENTS FOR B.D.

[The unit here used (called the "term hour") is equivalent to one program hour a week for a half-year.]

	Term Hours
Language (Hebrew, Greek, and German)	24
Science (Mathematics, Physics, and Biology)	18
History (Civil and Religious)	27
Bible (Language, History, etc.)	33
Philosophy (Psychology, Logic, Ethics, Systematic Theology, etc.)	33
Sociology (Law, Economics, and Applied Christianity)	30
English (Rhetoric, Literature, Oratory, and Homiletics)	36
Physical Training	2
Total	203
Deduct (counted twice)	15
Total term hours	188

In order to do in five years the work included in this synopsis, the student must begin the prescribed course with his Freshman year, and must manifest ability to carry with profit so heavy a program. He may receive A.B. at the end of four years, or with B.D. at the end of his course, as he may choose.

For all divinity students the major instructor and official adviser on general matters relating to college affairs is the Dean of the Divinity School, or some appointed representative from the Divinity Faculty.

Departments of Instruction

Following is a statement of subjects of study selected from the statement for the College of Letters, the numbering and other marking being preserved for convenient reference. Those subjects are selected which are most likely to be chosen by the student who is preparing for the Christian ministry. A fuller statement is made (pages 176 to 183), mainly of those subjects that are specially related to the minister's profession. The student should understand, however, that all the work offered in the College of Letters is open to him, under the usual regulations.

ENGLISH

See subjects 1, 2, 5, 10, 12, 17, 18, and 27, on pages 64 to 66 of this catalogue.

ORATORY

See subjects 1 and 3, pages 66, 67.

GERMAN

See subjects 1 to 3B, page 68.

GREEK

See subjects 1 and 2, page 73.

HEBREW

See subjects 1 and 2, page 75.

PHILOSOPHY

See subjects 1 to 8, pages 76, 77.

HISTORY

See subjects 1 to 5, and 11 to 14, pages 79 to 81.

PUBLIC LAW AND ADMINISTRATION

See subjects 1 to 6, page 81.

POLITICAL SCIENCE

See subjects 1 to 3, pages 82, 83.

MATHEMATICS

See subject 1, page 84.

PHYSICS

See subject 1, page 86.

BIOLOGY

See subject 1, page 91.

PHYSICAL TRAINING

See page 100.

OLD TESTAMENT

PROFESSOR WOODBRIDGE

The aim is to secure, chiefly through the English version, a working knowledge of the Old Testament, and an appreciative acquaintance with Hebrew thought and life. The course includes a history of the book; a history of the people Israel from whose literature the book was made; a history of the development of the literature; followed by critical and interpretative study. Hebrew is offered as the foundation of a more critical study.

SUBJECTS

1. History of the Jews before Christ. A study of the political relations, institutions, and literature of the Jewish people. [History 11.*] *Mon., Wed., Fri., 4.00.* PROFESSOR HARMON

2. General Introduction: the English Bible, other versions, the manuscripts, the canon. Special Introduction: history of the literature, origin of particular books. *Mon., Wed., Fri., 9.45.* (F)
PROFESSOR WOODBRIDGE

3. The Hebrew Language [Hebrew 1†]: the elements of grammar. Translation of portions of Genesis, of the book of Ruth, and other selections. *Tu., Th., Sat., 11.45.* PROFESSOR WOODBRIDGE

4. Hebrew Language [Hebrew 2†]: syntax, critical readings from the Historical Books, from the Prophets, and the Psalms. *Three hours a week.*
PROFESSOR WOODBRIDGE

5. Principles of Criticism; Critical Analysis of Genesis; the Pre-Exilian Prophets; Isaiah, with special reference to Authorship and Date; the Development of Hebrew Law; the Prophets of the Exile; Post-Exilian Literature. *Tu., Th., Sat., 8.45.* PROFESSOR WOODBRIDGE

* See page 80.
† See page 75.

NEW TESTAMENT

PROFESSOR HARMON

1. New Testament History [History 12*]. This subject covers the history of the Jews during the lifetime of Jesus, including their relations to the Roman government, and their political, social, and religious institutions and customs. It also includes the origin, extension, and development of the Christian Church until the destruction of Jerusalem. Incidentally these results form the historical background for the study of the New Testament literature.

2. New Testament Criticism. This subject covers the investigation of the origin and character of the Gospels and the apostolic literature, the aim being to acquire an understanding of the general conditions essential to the correct interpretation of the New Testament writings.

3. New Testament Exegesis. The work consists of lectures on methods of interpretation, followed by an examination of the Synoptic Gospels in the Greek, with the object of acquiring a knowledge of the ministry and teachings of Jesus. It includes also a study of the Pauline Epistles and the Johannine literature.

SUBJECTS

1. History of the beginnings of Christianity. A study of the times of Jesus, of the rise and growth of the apostolic church, and of the origin of its literature. *Mon., Wed., Fri., 3.00.* (F) PROFESSOR HARMON

2. New Testament Criticism. *Mon., Wed., Fri., 9.45.* (S) PROFESSOR HARMON

3. New Testament Exegesis and Theology. *Mon., Wed., Fri., 11.45.* PROFESSOR HARMON

HISTORY OF RELIGIONS

PROFESSORS KNIGHT AND WOODBRIDGE

1. History of Non-Christian Religions [History 13*]. The primary aim of this study is a general knowledge and catholic temper regarding the great religions outside Christianity. A

* See page 80.

secondary utility is found in that a candid study of the excellences and defects of many religions renders the student more able to reject the false and more inclined to rest in the true, and to give it his confidence and strength.

The sources of information to which the student is referred are in the library. They embrace the important authorities, both original and secondary..

The religions studied are those of ancient Egypt, Chaldea, Greece, Rome, and Persia, of ancient and modern India, China, Japan, and Turkey.

The chief topics noted are: the deity; the forms and meaning of worship; the theory of ethics, and the sanctions of moral life, including the scheme of salvation; the actual condition of the people representing each religion.

For the study of each topic in turn, the class is furnished with a syllabus and references. The results of their investigation are criticised and co-ordinated by students and instructor in the class-room.

2. The History of Christianity: Church History [History 14*].

The purpose is to secure a knowledge of the leading facts and forces in the history of the Christian Church, in its various branches. By such a knowledge, discovering the causes now at work in religion, the student obtains a grasp of present facts and problems such as he can obtain from no other source. Incidentally he becomes familiar with theological terms, and is furnished with the tools of theological work. In general, since in some degree the individual grows as the mass has grown, he finds in this study an education, an orderly development of his faculties.

The topics generally studied in regard to each period are: the external growth of the Church and its relations to the State; the internal organization; intellectual life and doctrine; moral life; the form and substance of worship. In the latter part of the year, special study is made of the chief re-

* See page 80.

ligious sects in the United States, and, lastly, of the history of doubt.

The books used by the student are mostly contained in the Library of the College and in that of the Universalist Historical Society.

In preparation for the regular class-room exercise, the student is provided with analysis of each topic in order, and with references to original and secondary authorities. The student brings the result of his investigation to the class-room, for criticism by his associates and instructor. At the completion of each topic the results are organized, and a written review held, the papers of which are returned, with comments as to truthfulness and mode of handling.

The students are also instructed in the methods of original investigation from primary authorities.

SUBJECTS

1. The Non-Christian Religions: Studies of the Religions and Civilizations of ancient Egypt, Chaldea, Greece, Rome, and Persia, and of Ancient and Modern India, China, Japan, and Turkey. *Tu., Th., Sat., 8.45.* (F)
PROFESSOR KNIGHT

2. Church History: History of the Church, of the Sects, and of Doctrines, from the Apostles to the Present Time; History of Doubt. *Tu., Th., Sat., 9.45.* PROFESSOR WOODBRIDGE AND PROFESSOR KNIGHT

ETHICS

[Philosophy 6, 7, 8. See page 77.]

PROFESSOR TOUSEY

Analytical and inductive study of the moral experience is followed by an attempt to develop a correct moral theory. Attention is given to the more important questions in ethical philosophy. Such doctrines as sentimentalism, hedonism, utilitarianism, intuitionalism, naturalism, and determinism are studied, not merely in a critical spirit, but with a view to discover the special aspects of truth for which they stand.

A course is also offered in the history of ethical speculation, and of the development of moral customs and ideas. Finally, the bearing of ethical theory on the leading problems of the

individual and the social life is discussed, particular attention being given to such subjects as duties, rights, education, charities, State aid, temperance, socialism. Some attention is also given to casuistry. The course concludes with a review of what is distinctively known as Christian ethics. The instruction throughout is shaped to bring into clearness the fundamental principles of morality, and to show their importance in the conduct of the personal life and in the moral guidance of others.

SUBJECT

1. The Moral Nature; Ethical Theory; Evolution of Morals; Practical Ethics; Ethics and Theism. *Mon., Wed., Fri., 10.45.* (F)
PROFESSOR TOUSEY

2. Practical Ethics. Moral Theory in relation to the Individual and Social Life. *Mon., Wed., Fri., 10.45.* (S) PROFESSOR TOUSEY

3. Ethics, Historical and Critical. History of Ethical Speculation; development of moral customs and ideals. *Tu., Th., Sat. 10.45.* (S)
PROFESSOR TOUSEY

PHILOSOPHY OF THEISM

[Philosophy 15. See page 78.]

PROFESSOR TOUSEY

At the outset some attempt is made to articulate the Final Problem, and to indicate the various answers that have been proposed. The different modes of the theistic argument are then reviewed, their grounds scrutinized, and their logical value considered. This imposes a patient hearing and pains-taking judgment of objections which have found expression in earlier and later times. In treating of the office of reason in matters of belief, and of the limits of the understanding, both mysticism and agnosticism come in for notice; and in discussing the attributes of God, and His relation to the universe, pantheism and pessimism receive somewhat special attention. The general method here, as in Ethics, is to employ treatises available as texts, and to supplement them by means of annotations, lectures, and parallel readings, the aim being to lead the student to the sources of evidence, and to establish a vigilant and correct method of inquiry. Much importance is attached to the dialectic of the class-room as securing a ready command of resources,

and as a corrective of ill-defined notions and hasty inference. An effort is made to treat subjects in the light of contemporary criticism and the latest developments of science; and, by testing and chastening conclusions, to provide against fanaticism on the one hand and frivolity of judgment on the other.

SUBJECT

1. The Final Problem; Limits of the Intelligence; Theistic Arguments; Final Cause in Nature; Anti-Theistic Theories. *Mon., Wed., Fri., 11.45.*
PROFESSOR TOUSEY

THEOLOGY

PROFESSOR KNIGHT

The purpose is, primarily, to assist the student to think independently on theological subjects, and to abide in the consequences. In pursuing this purpose, attempt is made to co-ordinate the products of biblical theology, religious history, natural theology, ethics, and, indeed, of all the proper sources of material, and thus to produce a scientific theology. It is believed that such a system will deserve and receive the student's confidence, and will enlist his energies.

The method includes several stages:—

1. The history of important doctrines and creeds, as a general introduction.

2. *a.* Special history of the topic in hand, with analysis and classification of opinions and theories according to their logical relations.

b. The collection of the facts, so far as given in the present state of knowledge, and the criticism of the theories on the basis of the facts.

c. The organization of the results into a scientific product.

d. Illustrative applications to practical problems,—ecclesiastical, political, social, and personal.

SUBJECTS

1. Historical Introduction. *Mon., Wed., Fri., 4.00.* (S)
PROFESSOR KNIGHT

2. Theology; Anthropology; Soteriology; Eschatology; Critical Study of Modern Doctrines. [Philosophy 16.*] *Tu., Th., Sat., 11.45.*
PROFESSOR KNIGHT

* See page 78.

APPLIED CHRISTIANITY

PROFESSOR WOODBRIDGE

The topic of study is the ministry of the church in the world. The purpose is to secure the efficiency of pastor and church in the promotion of the Christian life. The course covers one year, and is a series of lectures, supplemented by investigation. The lectures deal, in order, with the foundation principles of the ministry of the church, the proper scope and limitations of its work under these principles, efficient organization and best instrumentalities, and the specific duties which present-day life and problems make imperative. The course in investigation requires of the student a special study of some given community in its practical attempts at solving its own problems. He visits the institutions of religion and philanthropy, personally observes their work, and makes written report of the same for discussion in the class-room.

SUBJECT

1. The Efficient Ministry: Fnndamental Principles; Instrumentalities and Organization; Individual and Social Duties; Practical Methods. *Mon., Wed., Fri., 4.00.* PROFESSOR WOODBRIDGE

HOMILETICS

PROFESSOR LEONARD

The course in Homiletics covers two years. The first year [English 27†] is devoted to the sermon as a literary production; analysis of portions of the Old and the New Testament, with a view to the homiletical use of texts. In the main, the work of this year is given to the theoretical part of the study.

The second year is devoted to the study of printed sermons, with special reference to form, expression, and the character and range of illustration; the composition and delivery of sermons, which are criticised by the class and by the professor; lectures on invention and arrangement of material, style in spoken discourse, helps in sermon preparation from a study of character and literature, the homiletic habit, personality in preaching.

* See page 66.

In the Homiletical Seminary the subjects vary from year to year. The object is the discussion of different phases of the teaching. Each student presents a careful study of at least one aspect of the general subject, and leads in the discussion.

SUBJECTS

1. The Idea and Structure of the Sermon; Homiletical Analysis; Studies in Plans. *Tu., Th., Sat., 11.45.* PROFESSOR LEONARD

2. The Composition and Delivery of Sermons; Lectures on Preaching. *Tu., Th., Sat., 9.45.* PROFESSOR LEONARD

PASTORAL THEOLOGY

PROFESSOR LEONARD

The course in Pastoral Theology considers the minister as organizer and director of church activities. The subjects discussed relate to the more private and personal care which the minister exercises toward the members of a single congregation, or toward others whom he may be expected to influence. Careful study is invited to the qualifications — spiritual, mental, social — of a good pastor, the methods of forming and strengthening a parish; the conduct of public worship, and the mode of conducting the special services of the church,—baptism, confirmation, the Lord's Supper, marriage, and the burial of the dead. The object of this course is the practical preparation of the pastor for his sacred duties. Seminaries are held from time to time for the free discussion of pastoral methods and personal religious work, with special reference to concrete questions of immediate interest to the young minister.

SUBJECT

1. The Pastor's Personal Qualifications and Duties; the Pastor as a Leader of Thought and Worship; the Organized Work of the Parish; the Special Offices of Religion; Actual Work in Missions and Charities. *Tu., Th., Sat., 8.45.* (s) PROFESSOR LEONARD

Summary

A synopsis of the Course of Study (for one who enters with Greek and Latin) leading to A.B. in four years, and B.D. in one more year, embracing all the regular requirements for both degrees :—

FRESHMAN YEAR

Subject	Instructor	Time
Mathematics 1*a* and 3	Ransom	Tu. Th. Sat. 8.45
German 1	Reed	Mon. Wed. Fri. 9.45
Greek 2	Wade	Mon. Wed. Fri. 2.00
Physics 1	Chase	Mon. Wed. Fri. 10.45
Old Testament 1 [History 11] . .	Harmon	Mon. Wed. Fri. 4.00
English 1 and 2	Maulsby and Whittemore	Tu. Th. Sat. 10.45
Oratory 1	Maulsby	Th. 2.00
Physical Training	Lewis	

SOPHOMORE YEAR

Subject	Instructor	Time
Old Testament 3 [Hebrew 1] . .	Woodbridge	Tu. Th. Sat. 11.45
German 3 (or 2)	Fay (or Reed)	Tu. Th. Sat. (or Mon. Wed. Fri.) 8.45
English 5	Shipman	Tu. Th. 3.00 (F)
Philosophy 1 (or 2) and 5	Cushman	Tu. Th. Sat. 9.45
English 12	Maulsby	Mon. Wed. Fri. 2.00
New Testament 1 [History 12] .	Harmon	Mon. Wed. Fri. 3.00 (F)
History 1	Evans	Mon. Wed. Fri. 10.45
Oratory 3	Maulsby	
Physical Training	Lewis	

JUNIOR YEAR

SUBJECT	INSTRUCTOR	TIME
Biology 1	Kingsley and Lambert	Tu. Th. 11.45, 2.00, 3.00
Philosophy 3 and 4	Shipman	Tu. Th. Sat. 10.45
English 17 and 18	Maulsby and Whittemore	Mon. Wed. Fri. 8.45
History of Religions 2 [History 14]	Woodbridge and Knight	Tu. Th. Sat. 9.45
History 7 (or 2, or 3)	Evans (or Bolles)	Mon. Wed. Fri. 3. (S) (or 8.45 or 10.45 for the year)
Public Law and Administration 1	Evans	Mon. Wed. Fri. 11.45 (F)
Old Testament 2	Woodbridge	Mon. Wed. Fri. 9.45 (F)
New Testament 2	Harmon	Mon. Wed. Fri. 9.45 (S)

SENIOR YEAR

SUBJECT	INSTRUCTOR	TIME
Political Science 1	Metcalf	Tu. Th. Sat. 10.45
Public Law and Administration 4, 5, or 6	Evans	Mon. Wed. Fri. 11.45 (S)
Old Testament 5	Woodbridge	Tu. Th. Sat. 8.45
New Testament 3	Harmon	Mon. Wed. Fri. 11.45
Ethics 1 (Philosophy 6)	Tousey	Mon. Wed. Fri. 10.45 (F)
Ethics 2 (Philosophy 7)	Tousey	Mon. Wed. Fri. 10.45 (S)
Systematic Theology 1	Knight	Mon. Wed. Fri. 4.00 (S)
Homiletics 1 [English 27]	Leonard	Tu. Th. Sat. 11.45

FIFTH YEAR

SUBJECT	INSTRUCTOR	TIME
Political Science 2	Metcalf	Mon. Wed. Fri. 9.45
History of Religions 1 [History 13]	Knight	Tu. Th. Sat. 8.45 (F)
Philosophy of Theism [Philosophy 15]	Tousey	Mon. Wed. Fri. 11.45
Systematic Theology 2 [Philosophy 16]	Knight	Tu. Th. Sat. 11.45
Applied Christianity	Woodbridge	Mon. Wed. Fri. 4.00
Pastoral Theology	Leonard	Tu. Th. Sat. 8.45 (S)
Homiletics 2	Leonard	Tu. Th. Sat. 9.45

General Information Concerning the Divinity School

In addition to the information given on pages 191 to 207, the following is of interest to Divinity students.

RELIGIOUS OBSERVANCES

A religious service is held in the chapel in Miner Hall daily (except Saturdays and Sundays) at 1.45 P.M. Attendance is voluntary.

The Divinity students attend daily morning prayer in Goddard Chapel; and a religious service, wholly in the care of the students, is held in Miner Hall daily (except Saturdays and Sundays) at 1.45 P. M. Regular meetings of an active Y. P. C. U. are also held in Miner Hall.

SUPPLEMENTARY LECTURES

Lectures, which bear upon the general work of the Christian ministry, and upon special subjects of study, are given at intervals throughout the year by well-known clergymen of the vicinity.

The most noted divines of New England officiate every Sunday within easy distance, and may be studied by the student in respect to their teachings and their methods. It is the policy of the school to encourage the judicious use of these important instrumentalities of culture.

LICENSE TO PREACH

The regular time for applying for licensure is near the close of the first half of the Senior Year. Before that time the members of the Divinity School are not allowed to preach.

BUILDINGS FOR THE USE OF THE DIVINITY SCHOOL

Miner Theological Hall contains eight large, well-lighted, and well-ventilated lecture-rooms, and a special room for the meetings of the Faculty. Until other buildings are provided, one of the rooms in this hall is used for the Historical and Refer-

ence Libraries, and one is appropriately furnished for the religious services of the school. A third room in the same hall is furnished as a parlor, and is known as the Maria Miner Reception Room.

Paige Hall, the dormitory of the Divinity School, contains thirty-six single rooms, heated by steam and lighted by gas. Each room is carpeted, and provided with all necessary furniture—except sheets, blankets, pillow-cases, and towels.

EXPENSES AND PECUNIARY AID

Students in the Divinity School are charged *one hundred dollars* annually for tuition. This charge includes the privilege of occupying a room in Paige Hall, and provision for heating and caring for it.

The following scholarships are assigned exclusively to Divinity students; certain prizes are also available under conditions, especially as described on pages 203, 205 of this catalogue.

The General Convention of Universalists aids students by free scholarships, not exceeding one hundred and twenty-five dollars a year to any one student, subject always to the recommendation of the Faculty of the Divinity School. Those students, also, who are in the regular course are permitted to preach, under the direction of the Faculty, during the year-and-a-half preceding their graduation. In this way they may add to their pecuniary resources.

THE GREENWOOD SCHOLARSHIP.—The income of one thousand dollars, bequeathed by the late Mrs. Eliza M. Greenwood, of Malden, is given in prizes to members of the Divinity School, for excellence in the Department of Oratory.

THE DOCKSTADER SCHOLARSHIP.—The income of ten thousand dollars, given by George A. Dockstader, of New York, is appropriated to the aid of needy and worthy students.

The following scholarships amount to fifty dollars each:—

THE WHITTEN SCHOLARSHIP.—Founded by Mrs. Maria F. Whitten, of Cambridge.

THE HOLT SCHOLARSHIP.—Founded by Miss Celia Holt, of Stafford, Conn.

THE HENRY L. BALLOU SCHOLARSHIP.—Founded by Susan Ballou, of Woonsocket, R. I.

TWO BRADLEE SCHOLARSHIPS.—Founded by the late Caleb D. Bradlee, D.D., of Brookline.

TWO GOLDTHWAITE SCHOLARSHIPS.—Founded by the late Willard Goldthwaite, of Salem.

THE SARAH ELIZABETH PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of Brooklyn, N. Y.

TWO LUCIUS R. PAIGE SCHOLARSHIPS.—Founded by the late Lucius R. Paige, D.D., of Cambridge, Mass.

TWO ANN M. PAIGE SCHOLARSHIPS.—Founded by the late Ann M. Paige, wife of the late Rev. Lucius R. Paige, of Cambridge, Mass.

The income of five hundred dollars, given by REV. JOHN VANNEVAR, is used in the purchase of books for the Department of Homiletics.

GENERAL INFORMATION

General Information

RELIGIOUS OBSERVANCES

Goddard Chapel, erected in 1882-83, is the gift of Mrs. Mary T. Goddard, as a memorial of her husband, the late Thomas A. Goddard. Morning prayers are held daily, at which attendance is required. The care of the pulpit on Sunday devolves upon the Chaplain. A trained choir, composed of men and women students, sings on Sunday. Attendance upon Sunday service is required; but permission is freely given to those who desire to attend elsewhere.

The RUSSELL LECTURE, established in accordance with a bequest of the late James Russell of Arlington, is delivered before the Trustees, Faculty, and students, on the second Sunday of the college year, by either a clergyman or a layman, on a subject prescribed by the testator.

Two subjects are presented, in alternate years.

The subject for 1905 was "*The Sufficiency of the Promises of the Gospel to meet the Reasonable Wants of Man both in Time and in Eternity.*"

The subject for 1906 is "*The Importance of Christian Faith and Belief in the Formation of the Character of the Good Citizen and the Good Man.*"

TUFTS COLLEGE STUDIES

A publication called "Tufts College Studies" has been established, as a means of presenting to the world the results of original work done in the different departments of the College. The numbers, which are issued as material is ready, are distributed to educational institutions and learned societies. The College desires to establish regular exchanges of these Studies with all publishing institutions at home and abroad. Correspondence regarding exchanges should be addressed to the Librarian of Tufts College. One volume of the scientific series has been issued, and a single number of the English series. The editorial board of TUFTS COLLEGE STUDIES for the

current year is made up of the President of the College and Professors Knight, Dolbear, Kingsley, and Wade.

REGISTRATION

Every student in the College of Letters is required to file with the Registrar or his assistant a plan of study for the first term, on the morning of the opening day of that term; and a similar plan for the second term, on the opening day of the second term.

The registration for students not in the Engineering Department is made in duplicate on blanks furnished for the purpose, one copy to be kept on file by the Registrar, the other to be used, in case of Freshmen, by advisors, and in case of Special students and members of the upper classes, by major instructors. Each student also furnishes such data as are required by the Registrar for class lists. Registration is made for the first half-year in accordance with the following schedule:—

9–10 A.M.—All students except those in the Engineering Department will present themselves at the Secretary's office between these hours, and receive cards and assignments.

10–12 A.M.—All students, with the exception of members of the Freshman class, will meet their major instructors in accordance with assignments.

12–1 P.M.—Members of the Freshman class will meet their advisors in accordance with assignments.

2–4 P.M.—During this period students may consult instructors and file registration cards. All cards must be in the hands of the Registrar at or before four o'clock.

Consultation concerning programs for the second half-year are held by appointment with advisors and major instructors during the examination period (see calendar, pages 7 and 8).

On the first day of the second term, between nine and twelve o'clock, students in all departments must file their individual programs. Recitations begin in accordance with the official tabular program on Tuesday, the second day of the term.

Students will make their plans of study subject to the following regulations:—

No Freshman shall take a program of more than nineteen term hours during the first-half year.

No student shall take a program of more than eighteen term hours who has, for the preceding half-year, received the mark D in subjects aggregating three term hours, or the mark C in subjects aggregating more than six term hours.

No student shall take a program exceeding twenty-one term hours who, for the preceding half-year, has received the mark C in subjects aggregating three term hours, or the mark B in subjects aggregating more than nine term hours.

These rules do not apply to Physical Training.

Each student in the Engineering Department is required to file with the Secretary, on days as above described for other students, a plan of study, together with such data for class lists as shall be required.

Registration is made in accordance with the following schedule:—

10–12 A.M.—Students will register at the Secretary's office between these hours.

9–12 A.M.—During this time the instructors in the department may be consulted.

A registration fee of two dollars is imposed upon students in all departments who fail to register in person during the time prescribed above. This fee must be paid to the College Treasurer or his representative before registration can be permitted. Students are not recognized as members of classes until they have met all requirements of registration.

During the hours set apart for registration, instructors may be seen for consultation and for approval of plans of study, in rooms to be announced by posted bulletins.

PROGRAM

The unassigned subjects in the five o'clock column of the program are so far as possible assigned at a meeting in Ballou 4 at 12.30 P.M. on the second day of the first half-year, and at

4 P.M. on the first day of the second half-year. Every student concerned is required to be present at this time, either in person or by a proxy furnished with a complete tabular program of class engagements. Every instructor concerned is expected to to be present in person. These appointments supersede all others. No assignment or change of hour is official except as posted by the Committee on Program.

Any instructor is permitted, after the second full week of a term, to transfer a subject to another program hour, under the following conditions: (a) all students taking the subject must have the new hour free; (b) previous notice must be given to the Committee on Program; (c) the change, if finally made, must be reported at the College Office.

If such a change can be made in two consecutive years, the subject may be permanently transferred to the new hour.

The numbering of new subjects is to be determined by the Committee on Program in consultation with the respective instructors.

PROMOTIONS

Students in the courses leading to the degree of A.B. are registered as Sophomores when they have twenty-six term hours to their credit; as Juniors when credited with fifty-eight term hours; and as Seniors when credited with ninety term hours.

Students in the Engineering courses fail of promotion if they have deficiencies amounting to more than six term hours in the prescribed work of the year. The Engineering Committee will be in session from nine to twelve o'clock in the forenoon of the second day of the fall examinations, to consider the programs of such students in Engineering as have six or more term hours of conditions, or have failed to fulfil requirements imposed at the close of the previous year.

All prescribed work must be completed by the end of the Junior year, and all conditions must be removed on or before June 1st of the Senior year.

MAJOR SUBJECTS

Each student shall choose a major subject before the beginning of the Sophomore year.

A change of major subject may be made not later than the end of the Junior year, by vote of the Faculty, on petition approved by the two major instructors concerned.

A second major subject may be granted not later than the end of the Junior year, under the same conditions.

ATHLETICS

The supervision of all athletic sports is vested in a Board of Directors of Athletics, consisting of nine members, three of whom are appointed from the Faculty, three from the Alumni, and three elected from the undergraduates. This board through its sub-committees controls the expenditures of all moneys, the hiring of coaches, the arranging of games, the eligibility of players, and generally seeks to raise all college sports to a level of genuine usefulness. The Director of the Gymnasium limits the candidates for college teams to those students who have shown by a physical examination that they are qualified to engage in strenuous exercise.

ADMISSION FROM OTHER COLLEGES

Students entering Tufts College, after pursuing study in any other college of equal rank, are credited with the number of hours of work actually done toward the requirements of Tufts College, as certified by the proper authorities of the college from which the student comes. Such students must present satisfactory certificates showing the amount and character of work already accomplished, in order to obtain credit on a course of this College.

SPECIAL STUDENTS

Students who are not candidates for a degree, and who wish to pursue a special course of cognate studies, will be admitted to the College, subject to the following regulations:—

1. Every Special Student shall choose a major department, and shall make up a plan of study under the direction and subject to the approval of the major instructor.

2. The student shall satisfy the instructor in each subject included in the approved plan of study that he is able to pursue the work.

3. A Special Student, on leaving College, shall be entitled to a certificate giving the grade attained in each subject pursued, and signed by the President and the Registrar.

4. Special students in Electrical Engineering are required to pass examinations in General Physics, Trigonometry, and Elementary Calculus.

TERMS AND VACATIONS

Commencement occurs on the third Wednesday in June, and the college year begins thirteen weeks from the following Thursday. Once in seven years the vacation is fourteen weeks in length. The year is divided into two terms of eighteen weeks of work each. There are no college exercises during a recess of three days at Thanksgiving, twelve days at Christmas, and four days at Easter (see calendar, pages 7 and 8). On public holidays,—Washington's Birthday, the nineteenth of April, the seventeenth of June, and Memorial Day,—the college exercises are suspended. An examination period of ten days is held at the close of each half-year, during which time the daily class exercises are suspended.

A fine of two dollars will be levied on each student who shall fail to report in person to the Secretary of the Faculty or his deputy within two hours after the last program appointment of the student preceding each vacation of more than a single day, or within two hours before his or her first program appointment following each vacation of more than a single day. Such registration must take place during the regular office hours of the Secretary. The regularly appointed registration of studies after the summer vacation shall be construed as reporting in person.

ABSENCES

In case of absence, from any cause, involving more than three consecutive progam appointments, report is required to be made, either in person or by mail, messenger, or prepaid message, to the Secretary of the Faculty, together with the reason for such absence, and a statement of its probable dur-

ation, if it is to continue. This report may be made before the beginning of such absence. For the first failure to make such a report a fine of fifty cents shall be levied, and for each subsequent failure a fine of two dollars. In case of the anticipated absence of any student organization numbering not less than ten persons, notice may be given for all by one authorized representative or manager.

Not more than two hours previous to entering upon college work, after an absence involving more than three consecutive program appointments, each student shall report in person to the Secretary of the Faculty or his representative. In case of failure, fines of fifty cents and two dollars shall be levied, as above provided. Reports of the return of organizations may be made by the managers.

A report filed in accordance with these regulations shall not take the place of the required registration before and after vacations of more than a single day.

Students intending to leave college or to drop a single subject are required to report as for the beginning of an absence.

The above requirements will be waived in the case of individuals only in the event of serious illness or accident; and for the college at large only in case of storms so heavy as to block the customary avenues of communication and traffic.

Absence from Examinations.—Students absent from examinations and requiring special examinations to make up for such absence are charged two dollars for each special examination.

EXPENSES

The charge for instruction in all departments in the College of Letters, except the Department of Engineering, is *one hundred dollars* a year, or *four hundred dollars* for the full course leading to any degree other than in Engineering, whether the course be completed in three, four, or more years.

The charge for instruction in the Department of Engineering is *one hundred and fifty dollars* a year.

Students in the chemical laboratories are charged for breakage, and *four dollars* a term for materials used. A fee of *two*

dollars and a half a term is required of all students taking laboratory work in Biology. Students who take shop-work, except those in the Engineering courses, are charged extra.

Half room-rent, including heat, ranges from twenty-five to ninety-one dollars, in the several dormitories for men.* In those for women, half room-rent ranges from thirty to eighty-five dollars. Students furnish their own rooms. Any damage done by students to college property is charged in the term bills. Rooms in the college halls will be open for occupancy of students on and after the Wednesday of the week preceding the opening of the college year. Non-resident students in all departments, except the Medical and Dental Schools, are subject to a fixed annual charge of ten dollars.

A place of study for non-resident women students is provided in Ballou Hall, without extra charge. Men students may obtain the use of day-rooms in the dormitories by arrangement with the Bursar.

Every student is required to deposit with the Bursar of the College, *before October fifteenth*, either a bond with two satisfactory sureties for the sum of *two hundred dollars*, or the sum of *one hundred dollars* in cash, which sum, with interest at the rate of four per cent. yearly, will be returned when the student leaves the College, his term bills first being paid in full. No officer or student of the College will be accepted as a bondsman.

Students may deposit with the Bursar money for safe keeping. A receipt will be given, and the money, or any part of it, may be withdrawn on demand.

The charges for each year are contained in two bills, of which the first is made at the middle of the year, and is payable on the first day of March; the second is made immediately after Commencement, and is payable on the first day of the following college year; but the second bill of the Senior year must be settled by the Saturday before Commencement, or graduation will not be permitted. All college charges are payable to the Bursar, and all arrangements with regard to rooms are to be made with him.

* For further information concerning rooms, see pages 215 to 218.

The Executive Committee of the Trustees has power to order the suspension or dismissal of a student for failure to keep his bills promptly paid, or for other good and sufficient cause.

By an arrangement with the Somerville Hospital, students are assured free hospital treatment in case of illness, during their entire course. The cost to each student is two dollars a year.

Students board in commons at $3.75 per week; in private families at $3.50 to $5.00 for table board. Other expenses, such as for light, furniture, books, clothing, washing, and incidentals, vary with the economy of each student.

The following estimates represent the fixed annual expenses:—

Tuition	$100.00	$100.00
Physical Culture, including gymnasium and grounds	10.00	10.00
Reading-room	1.00	1.00
Hospital	2.00	2.00
Board, $4.00 to $5.00 a week (36 weeks)	144.00	180.00
Total	$257.00	$293.00

For the expenses of students of Engineering, consult the table of contents, under "Department of Engineering".

OFFICE HOURS

The President may be found in the Faculty Room in the morning, from 8.45 to 9.45. The Dean of the College of Letters is in his office in Ballou Hall, except for class engagements, throughout the forenoon. The office hours of the Dean of the Engineering Department are from 4.30 to 5.30 P.M., in the Bromfield-Pearson Building. The office of the Registrar and Secretary is open every morning, from 8.45 to 12.45, and every afternoon except Saturday, from 2.00 to 5.00. The Bursar will be in his office in Ballou Hall during term time, Monday, Wednesday, and Friday morning, from 8.30 to 12.00 o'clock.

SCHOLARSHIPS

Awards of scholarships are made by the Board of Trustees, on the recommendation of the Faculty. The obtaining of a scholarship for one year does not constitute any title to a second

nomination. Application for scholarships must be filed with the Bursar on blanks furnished for the purpose, on or before the first day of November; and, if the applicant be a minor, must be sanctioned by his parent or guardian. Scholarships will be granted, in general, only to students actually in need of such aid. No one need apply who has not made satisfactory progress, or whose conduct has not met the approval of the Faculty.

Scholarships are available for those students only whose term bills are fully paid within ten days after the opening of each college term, or after such bills shall have become due. The bills of any student whose connection with the College ceases are due at that time. The term bills of members of the graduating class are payable on the Saturday preceding Commencement day.

No scholarship is available to any student who is not a resident of a college dormitory, unless excused in writing from such residence by the authority of the Executive Committee of the Board of Trustees.

The following scholarships, the yearly income of which is one hundred dollars each, are awarded annually by the Trustees, but, except in special cases, when the donor has otherwise stipulated, the Trustees will award scholarships in the sum of fifty dollars each.

THREE STATE SCHOLARSHIPS.—Established in accordance with a resolve of the Commonwealth.

FIVE HOWLAND SCHOLARSHIPS.—Established from the income of the bequest of the late Edwin Howland, of South Africa.

FIVE WALKER MATHEMATICAL SCHOLARSHIPS.—Established in honor of the late William J. Walker, M.D., of Newport, R. I., and payable from the income of the Walker Fund.

TWO MOSES DAY SCHOLARSHIPS.—Founded by the late Moses Day, of Roxbury.

THE A. A. MINER SCHOLARSHIP.—Founded by the late A. A. Miner, D.D., of Boston.

THE REBECCA T. ROBINSON SCHOLARSHIP.—Founded by the late Charles Robinson, LL.D., of Newton.

THE WILLIAM OSCAR CORNELL SCHOLARSHIP.—Founded by William Oscar Cornell, of Providence, R. I.

THE ARA CUSHMAN SCHOLARSHIP.—Founded by Ara Cushman, of Auburn, Me. This scholarship is not available during the present year.

THE LAURA A. SCOTT SCHOLARSHIP.—Founded by Mrs. Laura A. Scott, of Ridgefield, Conn.

THE STOW SCHOLARSHIP.—Founded by the late Mrs. Eugenia D. Stow, of Meriden, Conn.

THE NORCROSS SCHOLARSHIP.—Founded by James A. and Mrs. Mary E. Norcross, of Worcester.

THE ANDERSON SCHOLARSHIP.—Founded by John M. Anderson, of Salem, in the name of John M. and Rebecca Anderson.

THE TRAVELLI SCHOLARSHIP.—Founded by Mrs. Emma R. Travelli, of Newton.

THE WHITTIER SCHOLARSHIP.—Founded by the late Charles Whittier, of Roxbury, in the name of Charles and Eliza Isabel Whittier.

THE TALBOT SCHOLARSHIP.—Founded by the late Newton Talbot, of Boston.

THE SIMONS MEMORIAL SCHOLARSHIP.—Founded by Mrs. Mary A. Simons, of Manchester, N. H., in memory of Hiram H., Augustus, and Frank Simons.

THE AMASA AND HANNAH L. WHITING SCHOLARSHIP.—Founded by Mrs. Hannah L. Whiting, of Hingham.

THE MARTHA GOLDTHWAITE MEMORIAL SCHOLARSHIP.—Founded by the late Willard Goldthwaite, of Salem.

THE ANDREW J. CLARK MEMORIAL SCHOLARSHIP.—Founded by Mrs. Abbie B. Clark, of Orange.

THE SARAH E. SAYLES MEMORIAL SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE COUSENS SCHOLARSHIP.—Founded by the late John E. Cousens, of Brookline, in the name of John E. and Sarah C. Cousens.

THE BENJAMIN F. SPINNEY SCHOLARSHIP.—Founded by Benjamin F. Spinney, of Lynn.

THE HENRY F. BARROWS SCHOLARSHIP.—Founded by Henry F. Barrows, of North Attleboro.

THE ELLERY E. PECK MEMORIAL SCHOLARSHIP.—Founded by Henry Rollins, of Bangor, Me. The income of this scholarship is not at present available.

THE J. H. MORLEY MEMORIAL SCHOLARSHIP.—Founded by Herbert Small Morley, of Templeton.

THE EDWIN H. CHAPIN MEMORIAL SCHOLARSHIP.—Founded by friends of the late E. H. Chapin, D.D., in New York City.

THE THOMAS A. GODDARD MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HOSEA BALLOU, 2D, MEMORIAL SCHOLARSHIP.—Founded by the late Mrs. Mary T. Goddard, of Newton.

THE HENRY E. COBB SCHOLARSHIP.—Founded by the late Henry E. Cobb, of Boston.

THE MARY ANN WARD SCHOLARSHIP.—Founded by Sylvester L. Ward, of Boston.

THE MARIA P. WINN SCHOLARSHIP.—Established from a bequest of the late Mrs. Maria P. Winn, of Woburn.

THE JOSEPH D. PEIRCE MEMORIAL SCHOLARSHIP.—Founded by the children and other relatives of the late J. D. Peirce, D.D., of Attleboro.

FIVE JOHN AND LUCY H. STOWE SCHOLARSHIPS.—Five scholarships for women students, founded by the late Mrs. Lucy H. Stowe, of Lawrence.

TWO SIMMONS SCHOLARSHIPS.—Founded by the will of Robert F. Simmons, of Attleboro, in the name of Mary F. and Robert F. Simmons.

THE JOSHUA S. AND HARRIET N. WHITE SCHOLARSHIP.—Founded by the late Joshua S. White, of Pawtucket, R. I.

THE JOHN B. PERKINS SCHOLARSHIP. — Founded by Ann Maria Perkins, of Medford.

TWO BARNARD SCHOLARSHIPS.—Founded by Caroline M. Barnard, of Everett.

THE BARTLETT SCHOLARSHIP.—Founded by the late Mrs. Nancy Bartlett, of Milford.

THE B. H. DAVIS SCHOLARSHIP.—Founded by the Rev. B. H. Davis, of Weymouth, for the benefit of students of the College of Letters who are preparing to enter the Christian ministry.

THE LATIMER W. BALLOU SCHOLARSHIP.—Founded by the late Latimer W. Ballou, of Woonsocket, R. I.

THE NATHANIEL WHITE SCHOLARSHIP.—Founded by Armenia S. White, of Concord, N. H.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

THE RHODE ISLAND SCHOLARSHIP.—Founded by several persons in Rhode Island.

TWO CHARLES AND FANNIE A. MINER BOOTH SCHOLARSHIPS.—Founded by the late Charles Booth, of Springfield, Vermont.

THE LUTHER GILBERT SCHOLARSHIP.—Founded by the late Mrs. Luther Gilbert, of Roxbury.

THE ORMSBEE CLASS SCHOLARSHIP.—Founded by Benjamin F. Smith, of Pawtucket, R. I.

TWO MARY AND LUTHER GILBERT SCHOLARSHIPS.—Founded by Mrs. Mary G. Knight, of Roxbury, for the benefit of women.

THE JAMES M. AND EMILY COOK SCHOLARSHIP.—Founded by Henrietta J. States, of Boston.

THE WILLIAM H. SHERMAN SCHOLARSHIP.—Founded by the late William H. Sherman, of Boston.

THE DAVIS COOK SCHOLARSHIP.—Founded by the late Davis Cook, of Cumberland, R. I.

THE AUSTIN B. FLETCHER SCHOLARSHIP.—Founded by Austin Barclay Fletcher, of New York City.

The following scholarships of fifty dollars each are awarded annually:—

THE A. A. MINER SCHOLARSHIP.—Founded by the late A. A. Miner, D.D., of Boston.

THE PERKINS SCHOLARSHIP.—Founded by James D. Perkins, of Brooklyn, N. Y.

THE MOSES DAY SCHOLARSHIP.—Founded by the late Moses Day, of Roxbury.

THE JOSEPH H. WALKER SCHOLARSHIP.—Founded by Joseph H. Walker, of Worcester.

THE GEORGE C. THOMAS SCHOLARSHIP.—Founded by George C. Thomas, of Philadelphia, Pa.

THE ALBERT W. SAYLES SCHOLARSHIP.—Founded by the late Albert W. Sayles, of Lowell.

THE LIZZIE P. ALLEN SCHOLARSHIP.—Founded by the late Lizzie P. Allen, of Derby Line, Vermont.

The following scholarships are awarded under special conditions:—

THE GREENWOOD PRIZE SCHOLARSHIP IN ORATORY.—Founded by the late Mrs. Eliza M. Greenwood, of Malden, and given to such student as shall have made, as the result of faithful work, together with at least a fair degree of attainment, the greatest improvement in Oratory.

THE WENDELL PHILLIPS MEMORIAL SCHOLARSHIP.—Founded to perpetuate the name, fame, and influence of Wendell Phillips. This scholarship is to be awarded to a student who has completed the Freshman and Sophomore years, and he is to have the benefit of it during the remainder of his course. The beneficiary must be of sound body, high character, and ability in declamation and debate, and must comply with certain special conditions, including participation in a competitive debate of the applicants at the end of the Sophomore year. The specific conditions governing the award of this scholarship may be obtained by those intending to apply therefor from the Secretary of the Faculty, to whom application should be made early in the Sophomore year. The income of this scholarship is at present seventy dollars.

THE MOSES TRUE BROWN SCHOLARSHIP.—A scholarship yielding fifty dollars annually, founded by the late Moses True Brown, of Sandusky, Ohio, formerly Professor of Oratory in Tufts College, for encouraging and assisting worthy students in the department of Oratory.

THE PRIZE SCHOLARSHIP OF THE CLASS OF 1898.—The sum of fifty dollars is given annually by the class of 1898 to that Senior who at the end of the Junior year shall have maintained the highest excellence in a course of study broadly and wisely chosen.

LOAN FUND FOR WOMEN.—The Woman's Universalist Missionary Society of Massachusetts maintains a fund which is loaned to deserving women students, in sums of one hundred dollars, at four per cent. This fund now amounts to about three thousand dollars.

PRIZES

GODDARD PRIZES.— In the second term of the academic year four prizes of *fifteen dollars* each are assigned from the Goddard Prize Fund, as follows:—

A prize for the best examination, by a member of the Junior or Senior class, on the Agricola of Tacitus, or the sixty-fourth poem of Catullus, or a play of Plautus or Terence, or the Ars Poetica of Horace.

A prize for the best examination in Plato's Symposium, or the Agamemnon of Æschylus, including an account of the author and his works.

A prize for the best examination in the Mathematics of the first year.

The translations must be left at the President's office by the first day of May, in sealed envelopes, accompanied by sealed letters containing the authors' names.

RHETORICAL PRIZES.—Six prizes are awarded as follows:—

Two prizes, of *twenty* and *ten dollars* respectively, to the best readers among students who have taken six term hours in Oratory.

Two prizes, of *twenty* and *ten dollars* respectively, to students who have taken four term hours in Oratory, for the best exhibition of improvement and skill in elocution.

Two prizes, of *twenty* and *ten dollars* respectively, on the same conditions, to students who have taken two term hours in Oratory.

The rhetorical prizes are awarded by a committee, chosen by the Faculty, who judge the work presented by the competitors upon the public day appointed for that purpose. In order to enter the public competition, candidates, as well as their selections, must be approved by the Professor of Oratory. A preliminary competition is held about ten days before the com-

petition announced in the calendar, at which a committee of the Faculty determine the contestants in the final and public readings.

ENTRANCE EXAMINATION PRIZES.—Two prizes, of *thirty* and *twenty dollars* respectively, are awarded for the best entrance examinations. No one will be considered a candidate for such prize unless he has passed the regular examinations in all the subjects required for admission to the College, and has been admitted without conditions. These prizes are payable at the end of the first term in College.

The foregoing prizes are not awarded, unless in the opinion of the respective judges there is sufficient merit in the several contests to warrant their distribution.

A regular day has been appointed for the annual announcement of the award of prizes and the assignment of Commencement parts,—the Wednesday before the beginning of the Thanksgiving recess.

COMMITTEE OF INFORMATION

It is the object of the Committee of Information to bring the student body in touch with the business and professional world by supplying information concerning positions that are available for graduates, or that may be temporarily filled by undergraduates during the summer vacation. By a systematic record, in which undergraduates and alumni coöperate, information is gratuitously at the disposal of both employer and employed.

HONORS AND DEGREES

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the College of Letters who shall have attained Grade A in approved subjects aggregating not less than eighteen term hours in a major department, and an average of Grade B in the collateral subjects. Subjects marked in the catalogue with an asterisk (*) will not count for Honors. Those marked with a double asterisk (**) will be counted for Honors only when special requirements, to

be defined by the instructors, have been complied with. Final Honors will be conferred only upon recommendation of the head of the department in which Honors are desired.

FINAL HONORS will be conferred at Commencement upon any member of the graduating class in the Engineering courses who shall have complied with the following conditions:—

In the two years immediately preceding graduation:—

1. He must have attained Grade A in the equivalent of six hours a week for a year in the subject in which he desires Honors.

2. He must also have attained Grade A in extra work in this or a cognate subject equivalent to three hours a week for a year.

3. He must have attained Grade B in the average of all his studies during this period.

The following subject in the Engineering Courses is open for Honors: ELECTRICITY.

HONORABLE MENTION will be made in the Commencement program and in the annual catalogue of a student who has attained, during the two years immediately preceding graduation, Grade A in nine term hours and not less than Grade B in three additional term hours of approved work in one department. Subjects marked in the Catalogue with an asterisk (*) or with a double asterisk (**) are under the conditions explained in the preceding paragraph concerning Final Honors in the courses in Liberal Arts.

Candidates for Honorable Mention are expected to report to the Office on or before May 1 the department or departments in which they look for such distinction.

THE DEGREE OF BACHELOR OF ARTS will be conferred at Commencement by the Trustees, on recommendation of the Faculty, upon students who shall have complied in a satisfactory manner with the conditions governing the degree as stated on pages 59 to 61.

THE DEGREE OF BACHELOR OF SCIENCE will be conferred upon students who shall have completed the Course in General Science, the Course in Chemistry, or the Medical Preparatory

Course, complying in a satisfactory manner with the conditions stated on pages 107 to 110.

THE DEGREE OF BACHELOR OF SCIENCE in Civil Engineering, Electrical Engineering, Mechanical Engineering, or Chemical Engineering, will be conferred upon students who shall have completed the required course, as defined on pages 115 to 127.

Students of the courses in the College of Letters may so arrange their elective work as to make it possible to obtain the degree of Bachelor of Science in Civil Engineering, Electrical Engineering, Mechanical Engineering, or Chemical Engineering, after a graduate course of one year in the Engineering Department. See pages 117, 118, for particulars.

For the advanced degrees of MASTER OF ARTS, MASTER OF SCIENCE, and DOCTOR OF PHILOSOPHY, see the announcement of the Graduate Department, pages 159 to 168.

Buildings and Equipment

The College buildings are seventeen in number. Ballou Hall contains recitation-rooms, the room of the President and Faculty, and the offices of the Dean, the Registrar, and the Bursar. It contains also the college bookstore. Other buildings are Barnum Museum; Goddard Chapel; Goddard Gymnasium; the Library; the Chemical Building; three dormitories,—East Hall, West Hall, Dean Hall, for men; Curtis Hall, containing the commons dining-hall, the post-office, and rooms for students; Metcalf Hall and the Start House, for women students. The Bromfield-Pearson School building is available for technical courses of the College. Two buildings, Miner Hall and Paige Hall, are devoted to the use of the Divinity School. A new building, Robinson Hall, provides for work in certain of the physical sciences. A power-house has been added, supplying light, heat, and power to the engineering buildings.

The dormitories are open for the use of students from seven days before the beginning of the first half-year until seven days after Commencement. In the summer the gates in the wire fence surrounding the buildings are closed at 5 P.M. on week days and all day Sunday. The Chapel is open in the summer for the inspection of visitors from 9.30 A.M. to 4.00 P.M.

LIBRARY

The library contains about fifty-two thousand bound volumes and thirty-seven thousand pamphlets. The College regularly receives more than two hundred periodicals. By favor of the late Senator Hoar the library is a depository for government publications. In the library building a reading-room, maintained by the students, supplies the daily and weekly papers. Separate rooms have been provided with facilities for the use of students working in the departments of History, the Ancient Languages, Music, English, and Political Science. The average annual increase by donation and purchase, for the last five

years, has been about two thousand eight hundred volumes. The library is open to all members of the College every day in the week, except Sunday, from 8.15 A.M. to 12.45 P.M., and from 2 to 5 P.M.

In addition to the general library, there is in Miner Hall the collection of the Universalist Historical Society (fifty-five hundred volumes and several thousand pamphlets), to which, on application, students have free access. During the past year several cases of books and Universalist periodicals have been donated from the library of the late Rev. Dr. John S. Lee. These await cataloguing. In the Barnum Museum is the department library of Natural History, numbering over twenty-two hundred volumes and more than fifty-six hundred pamphlets; and, besides the full collection of English works relating to music in the library proper, there is, in connection with the music-rooms in Goddard Gymnasium, the Metcalf musical library of sixteen hundred volumes. There are altogether about sixty-three thousand bound volumes available for use.

About a hundred and twenty-five standard compositions, in form for use upon the automatic instruments belonging to the music room, have been recently added to the equipment of the Department of Music — the gift of Mr. Albert Metcalf.

BARNUM MUSEUM

The Barnum Museum of Natural History was built in 1883-84 by the late Phineas T. Barnum, who gave the College a fund for its maintenance and for the addition of two wings to the central building. One of these wings has been erected. In addition to laboratory rooms, it affords space for the display of the mineralogical and geological collections.

The College is also indebted to Mr. Barnum for the larger portion of its zoological collection. This serves to illustrate all groups of the animal kingdom, and is especially rich in skeletons and mounted skins of mammals, the whole being well adapted for the purposes of instruction. The botanical collection consists of an herbarium containing a representation of the flora of New England, besides many specimens from Europe

and the southern and western states. The geological collection contains representatives of the various types of rocks, as well as of fossils from all formations. The mineralogical collection embraces fine examples of most of the species.

The laboratories and lecture-rooms of the department of Geology are in the main Museum building. The geological laboratory is provided with petrological microscopes, instruments for making rock sections, and other instruments. The mineralogical laboratory possesses the apparatus necessary for the determination of minerals, the analysis of ores, and assay work. The biological laboratories are in the newly-erected wing. The laboratory for elementary work is furnished with all necessary facilities, while the laboratories (two in number) for advanced and research work have all the appliances needed for investigation on the lines of anatomy, histology, and embryology.

The Barnum Museum is open for the inspection of visitors from 8.30 to 5.00 P.M., every day but Sunday.

GODDARD GYMNASIUM

Goddard Gymnasium, the gift of Mrs. Mary T. Goddard, is well adapted to provide the prescribed class and individual work, and to furnish wholesome physical exercise for all. It is fitted with the apparatus usually seen in a good modern gymnasium, including facilities for light and heavy gymnastics, fencing, wrestling, basket ball, base ball, and the many indoor athletic sports. In the offices is a full set of anthropometric instruments for the physical examination of all students. There is a large gallery, with padded running track twenty-four laps to the mile. The dressing rooms, lockers, and baths are well lighted and commodious. The building is heated by steam and lighted by electricity.

ATHLETIC FIELDS

The old campus is just outside the gymnasium, and on it are excellent tennis-courts, two base ball diamonds, and a foot ball field. Its close proximity to the college buildings is of great advantage to all concerned.

Tufts Oval is the large inclosed field on College Avenue, where inter-collegiate contests are played. It includes two base ball diamonds, a foot-ball field, and a quarter-mile, twenty-foot cinder track, for track athletics.

While athletics are encouraged and generously supported by the College, they are made subsidiary to the requirements of the curriculum, and thus the genuine advantage of the student is safeguarded.

CHEMICAL BUILDING

The building of the department of Chemistry contains laboratories for general inorganic, organic, analytical, and metallurgical chemistry, a large lecture-room, library, and weighing room, and the private laboratories of the professors in charge. The rooms are provided with all the modern laboratory conveniences, and are well supplied with apparatus and chemicals.

ROBINSON HALL

Robinson Hall is a memorial to the late Charles Robinson, and is designed for the use of the department of Engineering. It contains the physical and electrical laboratories, and drafting rooms for the department of Civil Engineering. In addition to recitation rooms, and offices of the instructors, there is a large lecture hall and a library.

PHYSICAL LABORATORIES. The laboratory of General Physics has a floor area of about 2500 square feet, and is provided with the necessary apparatus for quantitative work in mechanics, sound, light, and heat. Adjacent to it are rooms for photography, blue-printing, and experiments involving the use of chemicals and water.

Among the more important pieces of apparatus may be mentioned several balances of German and American make; a dividing engine, a chronograph, and a spectrometer from the Société Génevoise; an Elliott Brothers optical bench, and a large microscope with accessories. A great deal of serviceable apparatus is in use that has been made in the college workshops.

A photometer room thirty-nine feet long is used for the photometry of gas, incandescent and arc lamps, and such experiments in optics as require a long dark room. A large apparatus room is connected with the lecture hall and laboratories.

ELECTRICAL LABORATORIES. The testing laboratories are well equipped for general electric testing. The apparatus includes various makes of ammeters, voltmeters, wattmeters, galvanometers, electrometers, electro-dynamometers, resistance boxes, bridges, condensers, and standards of resistance, capacity, and electro-motive force.

The testing rooms are provided with direct current supply at any voltage from 2 to 120 volts from the battery room, and with alternating current at 100 volts from the transformer.

The transformer room is situated in the basement, and is equipped with transformers of various makes, including a battery of six, with oil insulation, and arranged to give any pressure from 1,000 to 30,000 volts. There is also a pair of Thomson Compensators, a Thomson 10-kilowatt electric welder, a 4-kilowatt rotary converter, and a special motor-driven high-frequency alternator, with which any periodicity up to 1,000 per second can be obtained. The armature of this alternator, which is of the Mordey type, is arranged with twelve independent circuits, which can be connected in any manner, so that a wide range of voltage and current can be readily obtained.

The building is lighted throughout by gas and electricity, and heated from an adjoining steam plant by direct and indirect methods.

BROMFIELD-PEARSON BUILDING

The Bromfield-Pearson Building contains the offices, recitation rooms, lecture and drafting rooms required for conducting the special courses of the school. It is also equipped for the Department of Drawing and Shopwork in the College. Abundant and uniform light is provided, and the drafting rooms are separated from the noise and confusion of the shops. The rooms are lighted by electricity from the adjoining Power Station, and power is furnished to the shops from the same source. One

end of the building is used exclusively by the pattern and machine shops. These are well equipped with modern tools and facilities for conducting the class work in mechanic arts.

THE POWER STATION

The Power Station is equipped with a one-hundred-and-twenty-five horse-power boiler, which supplies heat and power to the engineering buildings. It is also piped and equipped for experimental work in steam engineering.

The engine-room contains a twenty-five horse-power Sturtevant engine, directly coupled to a Mordey alternator, a forty-horse-power Harrisburg Standard engine directly coupled to a direct-current General Electric generator, a twenty-five horse-power Buckeye engine, and a ten horse-power Columbia gas engine belted to a direct-current generator. A storage battery of sixty elements furnishes current for lighting, power, and experimental purposes.

Connected with the Power Station is a forge shop and foundry, which has been recently enlarged to accommodate the increasing number of students.

THE DORMITORIES

The halls for the accommodation of students in the College of Letters are six in number. East, West, Dean, and Curtis Halls, for men, are arranged with convenient rooms in suites, are warmed by steam, lighted by gas, and have good modern plumbing. These halls provide rooms for two hundred and fifty men. Metcalf Hall, with accommodations for twenty-four women students, is a gift to the College by Mr. Albert Metcalf, of Newton. The first floor contains the rooms of the matron, a reception-room, cloak-room, reading-room, and dining-room. The second and third floors have pleasant rooms for students, with ample bath and toilet conveniences on each floor. In the wing is the kitchen on the first floor, the servants' room on the second. Every safeguard of health is provided. The Start House furnishes another home for women, with a matron, and rooms for thirteen students.

INSURANCE

Arrangements may be made through the Bursar's office whereby students in any of the dormitories can insure their personal effects, including books, furniture, and wearing apparel. The cost of such insurance is fifty cents for one hundred dollars for one year. Insurance is placed only in multiples of one hundred dollars, no risk is taken for less than one hundred dollars, and all premiums are payable in advance.

REGULATIONS CONCERNING COLLEGE ROOMS

The annual assignment of rooms will take place in the month of May, at a time appointed by the Bursar, due notice being given upon the official bulletin board. Students occupying any room may retain it for the following academic year by signing a new room-agreement. All rooms not thus provided for will be offered for rent to members of the three upper classes. Rooms not assigned at the annual allotment will be eligible to members of the entering class, in the order of application.

The right to occupy a College room is given only to the student or students to whom it is assigned: neither exchanges nor transfers of rooms are allowed, except by consent of the Bursar.

All men's rooms are for two students, except East 3, 12, 17, 22, 27, and 32, and Curtis 4, 6, 7, and 12, which are for a single student each. Where more than two students occupy a room, the rent will be increased proportionately.

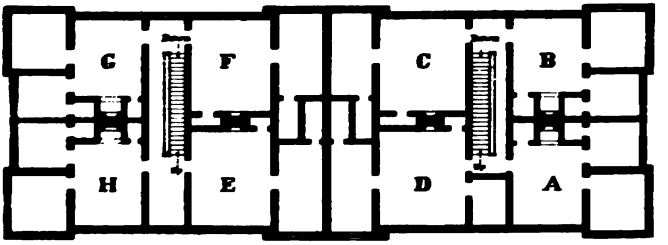
Each student receives his key on payment of fifty cents, which is refunded on the return of the key at the close of the College year.

ROOM RENT

The prices given for room rent in the lists below are for the whole room during the academic year, and include heat and care. All rooms are lighted with gas. Each suite is metered separately, and the occupants pay for the gas actually consumed. None of the rooms are furnished.

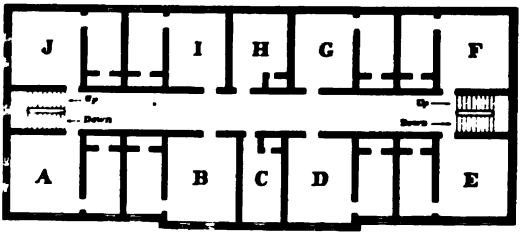
Room rent in the men's dormitories is in accordance with the following diagrams and prices:—

WEST HALL



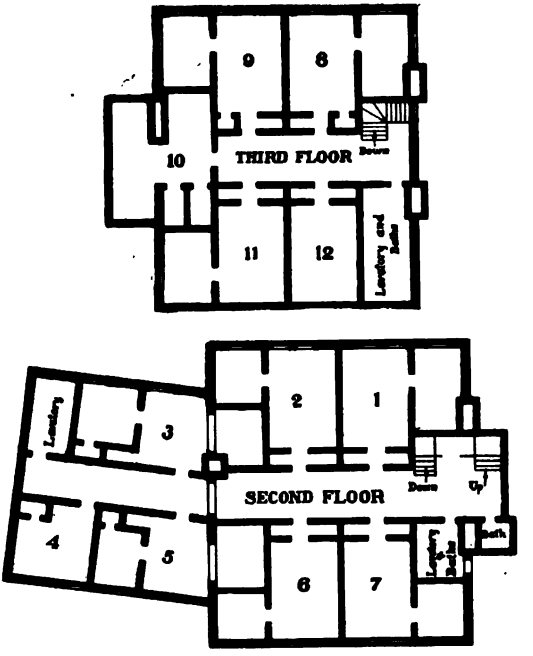
FIRST FLOOR		SECOND FLOOR		THIRD FLOOR		FOURTH FLOOR	
A 1	$128	A 5	$182	A 9	$140	A 13	$96
B 2	102	B 6	128	B 10	118	B 14	80
C 3	92	C 7	100	C 11	96	C 15	74
D 4	128	D 8	172	D 12	140	D 16	96
E 17	128	E 21	172	E 25	140	E 29	96
F 18	92	F 22	100	F 26	96	F 30	74
G 19	102	G 23	128	G 27	118	G 31	80
H 20	128	H 24	182	H 28	140	H 32	96

EAST HALL



BASEMENT		FIRST FLOOR		SECOND FLOOR		THIRD FLOOR	
A		A 6	$ 96	A 15	$110	A 25	$102
B		B 7	92	B 16	110	B 26	100
C		C		C 17	43	C 27	40
D		D 8	92	D 18	110	D 28	100
E		E 9	100	E 19	118	E 29	110
F 1	$60	F 10	100	F 20	110	F 30	100
G 2	55	G 11	80	G 21	86	G 31	80
H 3	30	H 12	40	H 22	43	H 32	40
I 4	55	I 13	80	I 23	86	I 33	80
J 5	55	J 14	86	J 24	90	J 34	86

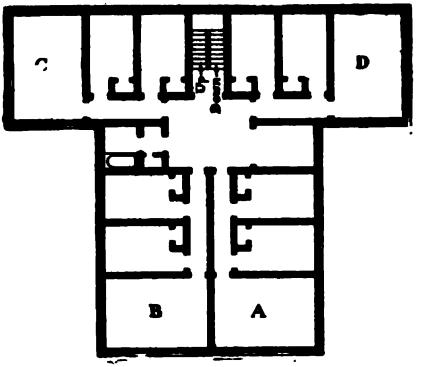
CURTIS HALL



1 . . $70	4 . . $45	7 . . $50	10 . . $75
2 . . 70	5 . . 90	8 . . 75	11 . . 75
3 . . 70	6 . . 50	9 . . 75	12 . . 40

Nos. 4, 6, 7, and 12 are single rooms.

DEAN HALL



FIRST FLOOR	SECOND FLOOR	THIRD FLOOR	BASEMENT
A 1 . . $160	A 5 . . $160	A 9 . . $160	A 13 . . $85
B 2 . . 160	B 6 . . 160	B 10 . . 160	B 14 . . 85
C 3 . . 160	C 7 . . 160	C 11 . . 160	C
D 4 . . 160	D 8 . . 160	D 12 . . 160	D

METCALF HALL AND START HOUSE

In the women's dormitories, the prices for room rent are as follows. In Metcalf Hall, rooms B and C, $100 each; 6, 7, 14, and 15, $170; 2,3, 10, and 11, $150. These rooms accommodate two students each. The following rooms are for a single student: 1, 4, 8, 9, 12, and 16, $75; 13, $60; A, $50; 5, $40. In the Start House there is but one room for a single student: number 2, at $30. The other rooms are for two persons: 1, 3, and 4, $120; 5, $110; 6, $60; 7, $100.

THE MEDICAL SCHOOL

Faculty of the Medical School *

FREDERICK WILLIAM HAMILTON, A.M., D.D. . . Tufts College
ACTING PRESIDENT

HAROLD WILLIAMS, A.B., M.D., LL.D. . . . . 528 Beacon St.
DEAN, *and Professor of the Theory and Practice of Medicine*

FREDERIC MELANCTHON BRIGGS, A.B., M.D.,
31 Massachusetts Ave.
Professor of Clinical Surgery and Secretary of the Faculty

HENRY WATSON DUDLEY, M.D. . . . . Abington
Professor of Pathology, Emeritus, and Lecturer on Legal Medicine

JOHN LEWIS HILDRETH, A.M., M.D., LL.D.
Professor of Clinical Medicine, Emeritus 14 Garden St., Cambridge

CHARLES PAINE THAYER, A.M., M.D. . . . . 69 Gainsboro St.
Professor of Anatomy, Emeritus

ERNEST WATSON CUSHING, A.B., M.D., LL.D. 168 Newbury St.
Professor of Abdominal Surgery and Gynaecology

HENRY JABES BARNES, M.D. . . . . 429 Beacon St.
Professor of Hygiene

EDWARD OSGOOD OTIS, A.B., M.D. . . . . 81 Beacon St.
Professor of Pulmonary Diseases and Climatology

CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree
Professor of General Chemistry

JAMES SULLIVAN HOWE, M.D. . . . . 437 Marlborough St.
Professor of Dermatology

MORTON PRINCE, A.B., M.D. . . . . 458 Beacon St.
Professor of Diseases of the Nervous System

HENRY BECKLES CHANDLER, C.M., M.D. . . . 34½ Beacon St.
Professor of Ophthalmology

FRANK GEORGE WHEATLEY, A.M., M.D. . . . North Abington
Professor of Materia Medica and Therapeutics

GEORGE ANDREW BATES, M.S., D.M.D. . . . . Auburndale
Professor of Histology

* The names of the Faculty of Medicine, after the President, the Dean, and the Secretary, are arranged so far as possible in the order of academic seniority. When only the street and number are given, the street is in Boston.

GARDNER WELD ALLEN, A.B., M.D. . . . . 419 Boylston St.
Professor of Genito-Urinary Surgery

HOWARD SUMNER DEARING, A.M., M.D. 491 Massachusetts Ave.
Assistant Professor of Clinical Medicine

HERBERT WARREN WHITE, M.D. . 151 Humboldt Ave., Roxbury
Assistant Professor of the Theory and Practice of Medicine

EDWARD BINNEY LANE, A.B., M.D. . . . . 419 Boylston St.
Professor of Mental Diseases

EDWARD MAVERICK PLUMMER, M.D. 5 Adams St., Charlestown
Professor of Otology

GEORGE HAMLIN WASHBURN, A.B., M.D. . 377 Marlborough St.
Professor of Obstetrics

ARTHUR EVERETT AUSTIN, A.B., M.D.
163 Suffolk Road, Chestnut Hill
Professor of Medical Chemistry and Toxicology

HORACE DAVID ARNOLD, A.B., M.D. . . . . 427 Beacon St.
Professor of Clinical Medicine

EDMUND CHANNING STOWELL, A.B., M.D.
Assistant Professor of Children's Diseases 69 Adams St., Dorchester

JOHN LINCOLN AMES, A.B., M.D. . . . . 72 Chestnut St.
Assistant Professor of Clinical Medicine

WILLIAM ELISHA CHENERY, A.B., M.D. . . 222 Huntington Ave.
Professor of Laryngology

GEORGE WARTON KAAN, M.D. . . . . 419 Boylston St.
Professor of Clinical Gynaecology

GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D.
Professor of Physiology 6 Mason St., Cambridge

CHARLES FAIRBANK PAINTER, A.B., M.D. . 86 Bay State Road
Assistant Professor of Orthopedic Surgery

TIMOTHY LEARY, M.D. . . . . 20 Sunset St., Roxbury
Professor of Pathology and Bacteriology

EUGENE THAYER, A.M., M.D. . . . 2683 Washington St., Roxbury
Demonstrator of Anatomy

FRANK LEE DRUMMOND RUST, M.D. . . . . 543 Boylston St.
Associate Professor of Ophthalmology

HARRY HOMER GERMAIN, M.D. . . . . 4 Arlington St.
Assistant Professor of Anatomy

OTHER INSTRUCTORS *

WALTER ELMORE FERNALD, M.D. . . . . Waverley
Clinical Lecturer in Mental Diseases

EDWARD LAMBERT TWOMBLY, A.B., M.D. . . . 483 Beacon St.
Instructor in Clinical Gynaecology

CHARLES MELVILLE WHITNEY, M.D. . . . . 591 Tremont St.
Instructor in Genito-Urinary Diseases

WILLIAM EASTMAN FAY, A.B., M.D.
Assistant in Clinical Medicine 366 Commonwealth Ave., Boston

JOHN JENKS THOMAS, A.M., M.D. . . . . 88 Bay State Road
Instructor in Neurology and Neuropathology

LAWRENCE W. STRONG, M.D. . . . 339 Bowdoin St., Dorchester
Assistant in Haematology

FREDERICK STEARNS HOLLIS, S.B., PH.D. . Newton Highlands
Instructor in Medical Chemistry

EDWARD ALLEN PEASE, M.D. . . . . 483 Beacon St.
Instructor in Clinical Surgery and Assistant in Clinical Gynaecology

ROBERT WORTHINGTON HASTINGS, A.M., M.D.
45 Kilsyth Road, Brookline
Instructor in Theory and Practice of Medicine and Assistant in Pediatrics

RICHARD FITCH CHASE, M.D. . . . . 419 Boylston St.
Instructor in Clinical Medicine and Lecturer on Gastro-Intestinal Diseases

ARTHUR WILLARD FAIRBANKS, M.D. . . . . 591 Beacon St.
Instructor in Clinical Medicine

ROBERT MICHAEL MERRICK, M.D. . . 15 Adams St., Dorchester
Assistant in Clinical Medicine

CHARLES HENRY WINN, A.B., M.D. . . . . 1474 Tremont St.
Assistant in Clinical Medicine

ELMOND ARTHUR BURNHAM, A.B., M.D. . 154 Huntington Ave.
Assistant in Clinical Medicine

JOHN NELSON COOLIDGE, A.B., M.D. . . . 409 Marlborough St.
Instructor in Clinical Medicine

CHARLES BALFOUR DARLING, A.B., M.D.
Instructor in Clinical Gynaecology 27 Rockville Park, Roxbury

* The names of members of the Board of Instruction are arranged so far as possible in the order of academic seniority.

FRANCIS DENNIS DONOGHUE, M.D. . . . . 409 Marlborough St.
Instructor in Operative Surgery

THEODORE CHARLES ERB, M.D. . . . . 159 St. Botolph St.
Instructor in Obstetrics

CHARLES DAVISON KNOWLTON, M.D. 574 Warren St., Roxbury
Instructor in Pathology and Bacteriology

FREDERIC WARREN PEARL, A.B., M.D.
Hotel Vendome, Commonwealth Ave.
Instructor in Operative and Clinical Surgery and Assistant Demonstrator of Anatomy

EDWARD ELIPHALET THORPE, M.D. . . . . 711 Boylston St.
Instructor in Medical Chemistry

FRANK PERCIVAL WILLIAMS, M.D. . . . . 419 Boylston St.
Instructor in Rectal Diseases

HENRY FOWLER RANSFORD WATTS, M.D. . 6 Monadnock St.
Assistant in Clinical Medicine

JOHN PETER TREANOR, M.D. . . . . 3 Howes St., Dorchester
Assistant in Clinical Medicine

LEON EDWARD WHITE, A.B., M.D. . . . . 543 Boylston St.
Assistant in Otology

WILLIAM HERBERT GRANT, M.D. . . . . 845 Boylston St.
Instructor in Clinical Gynaecology

WILLIAM GRAY ADAMS, M.D. . . . . Hyde Park
Assistant Demonstrator of Anatomy

FREDERICK WINSLOW STETSON, A.B., M.D. . . 637 Dudley St.
Assistant in Clinical Medicine

RALPH CLINTON LARRABEE, A.B., M.D. . . . . 912 Beacon St.
Instructor in Clinical Medicine and Haematology

JOHN SHEPARD MAY, M.D. . . . . 219 Warren St., Roxbury
Instructor in Obstetrics and Assistant in Clinical Medicine

RICHARD FROTHINGHAM O'NEIL, M.D. . . . . 379 Beacon St.
Demonstrator of Surgical Apparatus and Bandaging

THOMAS JAMES O'BRIEN, PH.G., M.D. 1470 Tremont St., Roxbury
Assistant in Clinical Medicine

JOSEPH HENRY SAUNDERS, A.B., M.D. 217 Harvard St., Brookline
Assistant in Clinical Medicine

ELIZABETH ANGELA RILEY, M.D. . . . . 483 Beacon St.
Instructor in Gynaecology and Abdominal Surgery

JAMES WILLIAM HINCKLEY, M.D. . . . . 18 Huntington Ave.
Instructor in Obstetrics

FREDERICK FINCH STRONG, M.D. . . . . 178 Huntington Ave.
Instructor in Electro-Therapeutics

GEORGE FRANCIS McINTIRE, M.D. . . . 5 Dana St., Cambridge
Assistant Demonstrator of Anatomy

EDWIN B. NIELSON . . . . . 214 Newbury St.
Instructor in Clinical Gynaecology

WILLIAM ROBIE PATTEN EMERSON, A.B., M.D.
Assistant in Diseases of Children 657 Boylston St.

ELWOOD TRACY EASTON, M.D. . . . . 871 Boylston St.
Instructor in Ophthalmology

JOHN WILLIAM LANE, A.B., M.D. . . . . 665 Boylston St.
Assistant Demonstrator of Anatomy

LUTHER GORDON PAUL, M.D. . . . . 657 Boylston St.
Instructor in Clinical Surgery and Assistant Demonstrator of Anatomy

HARRY CALDWELL PARKER, M.D. . . . . 317 Marlborough St.
Instructor in Ophthalmology

GUY MORRISON WINSLOW, A.B., PH.D. . . . . Auburndale
Instructor in Histology

ADELAIDE OLGA CUSHING-LEARY, M.D. 20 Sunset St., Roxbury
Assistant in Pathology and Bacteriology

ARTHUR THORNTON LEGG, M.D. . . . . 535 Beacon St.
Assistant in Orthopedics and Assistant Demonstrator of Anatomy

THEODORE CHAPIN BEEBE, JR., A.B., M.D. . 416 Marlborough St.
Assistant Demonstrator of Anatomy and Assistant in Surgery

CLARENCE HATHORNE STAPLES, A.B., M.D.
Assistant in Haematology 48 Washington St., Malden

WALTER FREEMAN NOLEN, M.D. . . . . 535 Beacon St.
Assistant Demonstrator of Anatomy

FRANCIS JOSEPH WELLER, A.B., M.D. . . . . Hotel Nottingham
Assistant in Otology

JOHN DONOVAN CLARK, B.S., M.D. . . . . Auburndale
Instructor in Anatomy

ROBERT EATON ANDREWS, A.B., M.D. . . . . Cambridge
Assistant Demonstrator of Anatomy

FRANK EUGENE HASKINS, M.D. . . . . 360 Massachusetts Ave.
Assistant Demonstrator of Anatomy

WILLIAM LITTLEFIELD RIPLEY, M.D. . . . . Newton
Instructor in Physiology

MARGARET ELIZABETH CARLEY, M.D. . . . . Boston
Assistant in Physiology

SIDNEY CURTIS HARDWICK, M.D. . . . . Quincy
Instructor in Physiology

EDISON W. BROWN, M.D. . . . . 406 Ruggles St.
Assistant in Pathology and Bacteriology

LEON SAMUEL MEDALIA, M.D. . . . . 1070 Boylston St.
Assistant in Pathology and Bacteriology

LABORATORY ASSISTANTS

Anatomy

GEORGE R. CALLENDER . . . . . Northfield
JAMES A. HONEIJ . . . . . Johannesburg, Transvaal

Physiology

RALPH W. E. COLE . . . . . Franklin Falls, N. H.
ELWIN H. WELLS . . . . . Rumney, N. H.
FRANK W. WHITE . . . . . Arlington
HOWARD A. LANPHER . . . . . Roxbury

Histology

FRANKLIN WELLES . . . . . Boston
MARION F. ALBRO . . . . . Providence, R. I.
WALTER H. YOUNG . . . . . East Dedham
SOLOMON H. RUBIN . . . . . Boston

General Chemistry

JOSEPH A. MEHAN . . . . . Lowell
ARDENNE A. STOTT . . . . . Reading
JOHN B. A. JOHNSON . . . . . Lowell
RAYMOND E. GATES . . . . . East Dedham
CHARLES A. DERBY . . . . . Boston

Medical Chemistry

MYRON W. MARR . . . . . Dorchester
ARTHUR T. GAGE . . . . . Winchester
CARL E. RICHARDSON . . . . . Marlboro, N. H.
EARLE D. SAWYER . . . . . Bridgeton, Me.

Pharmacology

WILLIAM J. BROWN . . . . . Boston

Assistants in Pharmacology

CHARLES SHAPIRO . . . . . Boston
DENNIS H. CARR . . . . . Boston
DOMIZIO A. COSTA . . . . . E. Boston
NATHAN ADDELSON . . . . . Boston

OTHER OFFICERS

HERBERT T. BROWN . . . . . Tufts College
Bursar

ALICE M. MOOAR
Stenographer

LILLIAN M. TATTAN
Clerk to Secretary

STANDING COMMITTEES OF THE MEDICAL SCHOOL

ADMINISTRATION.—The President, the Dean, the Secretary, Drs. Wheatley and Leary

CATALOGUE.—Drs. Arnold, Bates, and Dearborn

NOMINATIONS.—Drs. Wheatley and Arnold

LIBRARY.—Drs. Otis, Howe, and Cushing

COURSE OF INSTRUCTION.—Drs. Leary, Arnold, Bates, and Washburn

ADMISSION.—Drs. Leary, Dearborn, and Bates

WOMEN'S ADVISORY COMMITTEE.—Drs. Elizabeth A. Riley, Olga Cushing-Leary, Edna Weil Dreyfus

Student Government Board

With the intention of increasing the teaching efficiency of the School, and of eliminating, so far as possible, disciplinary relations ordinarily existing between instructor and pupil, a Student Government Board has been tentatively established.

The Board is composed of nine members, chosen by ballot, by the students. One is elected at large from each School, and the remaining seven are chosen one from each class. The Board forms its own organization. The functions are, at present, chiefly advisory. To it are referred questions of discipline, and general matters relating to the policing of the building.

The Board organized for the present year is as follows:—

CHAIRMAN
Harry H. Flagg, '08

SECRETARY
Mark Tishler, '07

MEDICAL SCHOOL
Arthur W. Bagnall, '06
Arthur S. Fletcher, '06
Joseph H. Kerrigan, '07
Philip W. Place, '09

DENTAL SCHOOL
Charles H. Bacon, '06
William H. Eaton, '06
Earl A. Carvill, '08

Tufts College Medical School

The Tufts College Medical School was established in Boston in 1893. Women are admitted upon the same terms as men. Since its establishment its rapid growth is believed to be without precedent in the history of American medical schools. It is now the largest medical school in New England. Three times it has been found necessary to change the location of the School to provide larger laboratory facilities for the constantly increasing number of students. In 1900 it was voted by the Trustees to provide a new building for the combined Medical and Dental departments. Land was purchased upon the corners of Huntington and Rogers avenues and Courtland and Drisko streets, and ground was broken for the new medical school early in the autumn. This building is occupied by the combined Medical and Dental Schools. It is constructed of Jonesport red granite and brick, with terra-cotta trimmings. It contains nearly an acre-and-a-half of floor space; is heated and ventilated throughout by both the direct and the indirect system; and is lighted by electricity. Modern improvements have been introduced in all departments, and no expense has been spared to make it the best-arranged structure of its kind in New England. The building can be reached by all Huntington Avenue cars except the Cross Town and Cambridge lines.

Subjects of Instruction

ANATOMY

The course in anatomy is given throughout the first half of the first year. It consists of five lectures and three recitations weekly with the class, and of special demonstrations on the difficult part of the work by the instructors. In the dissecting room

each student is required to dissect two parts, to the satisfaction of the Demonstrator of Anatomy, before taking the final examination. It is necessary for every student to dissect three parts, before graduation. Record of attendance and of the quality of the work done in the dissecting room will be kept, and will largely determine the standing of the student in the class.

PHYSIOLOGY

The course in physiology is given throughout the latter half of the first year. It constitutes half of the entire work required of the student during that period. The course consists of four recitations, two lectures, six hours of laboratory work, and three conferences for every student, each week, together with the preparation of a technical written paper, and extra demonstrations. At the end of each month there is an important written examination.

In the recitations, familiarity with the subject matter of an assigned text-book of physiology, and of the syllabus, is required. The lectures set forth the principles of general and descriptive physiology, and suggest some of its relations to the allied sciences, especially anatomy. In the laboratory the student has opportunity to acquire a degree of technical skill in the use of instruments and apparatus, demonstrating for himself meanwhile some of the most important facts of biological function, a specialty being made of an acquaintance with the nature of protoplasm. A strict practical examination may be held at the end of the year in the laboratory. The conferences give each student opportunity to become familiar with the liter ature on important interesting physiological topics, which are then presented in written reports and freely discussed by the whole class. Record both of the attendance and of the quality of the work done in the laboratory and recitation-room will be kept, and, with the conference, will help to determine the standing of the student in the class. In addition, a three-hour written examination covering the entire work of the year is held at the completion of the work, besides the important subsidiary written examinations, monthly.

A brief reviewing course in physics as related to physiology, given by the department of physics in the College of Letters, is a part of this course. This year the lectures are given by Assistant Professor Harry G. Chase.

Advanced work in physiology will be provided for competent students, by special arrangement with the head of the department. Work in this department is also offered to candidates for the degree of Master of Arts. The constant aim is to adapt the work of each student both to his needs and to his capabilities.

GENERAL CHEMISTRY

The course in general chemistry consists of descriptive chemistry and qualitative analysis, with so much of theoretical chemistry as is necessary for a proper understanding of the subject.

The classification of the carbon compounds also is taken up at considerable length, and special reference is made to those which are of interest in the study of medicine. The instruction is by lectures, recitations, and practical work by the students in the laboratory. There are five lectures, two recitations, and six or more hours of laboratory work for each student, every week. Much attention is given to qualitative analysis for the sake of the valuable training which it imparts, and the knowledge of chemistry which is incidentally gained. The importance of this knowledge is evinced by the fact that it is the only non-professional subject that is required in most medical schools. The aim is to impart such information in chemistry as is necessary to the intelligent physician. At the same time any who wish to pursue the study further than is required of every graduate may do so by special arrangement.

Certificates of satisfactory completion of Chemistry 1, 2, and 3, in the academic department of Tufts College, will be accepted in the Medical School in place of General Chemistry. It is intended to make this course lead directly to the medical chemistry of the second year, and it includes much of the preliminary work of that course.

HISTOLOGY AND EMBRYOLOGY

The work in histology covers the first half of the school year, and is both didactic and practical. The practical work in the laboratory is emphasized. Here the student comes into the most intimate relation with the elements of the body, the legitimate objects of his study. He learns to use the microscope and to manipulate sections. Being required to draw what he sees, he forms a mental picture of the objects of study which he never forgets.

The department aims to bring before the student the latest utterance of the best authorities, and to present the subject from the standpoint of the medical student. It must be obvious that histology, dealing as it does with the tissue elements of the body in their normal condition, is vitally important in the study of pathology, when it is understood that it is morbid changes in these elements which constitute pathological conditions. The student's future study of pathology is kept constantly in mind, and the teaching of the department has a direct bearing upon that end.

Embryology will be presented so far as to give the student a knowledge of the origin of the tissues in the embryo, and to furnish him with an understanding of such conditions as will aid him in the study of obstetrics. The department is furnished with microscopes, the use of which, on payment of a small fee, will be afforded to such as are unable to furnish instruments of their own.

Written exercises and recitations will form a part of the course.

PHARMACOLOGY

Instruction in pharmacology consists of lectures, recitations, and laboratory exercises, twelve hours a week throughout the first half-year. Especial attention is given to the physiological action of drugs in its relation to their therapeutical application, and to the relation always existing between therapeutics and physiological and pathological laboratory work. The laboratory course is designed to familiarize the student with all medic-

inal preparations and processes, and consists of exercises in which the class in sections is led to this result practically.

Prescription writing and the metric system will receive careful attention. Such of the recent additions to *materia medica* as are deemed worthy will be properly considered.

MEDICAL CHEMISTRY AND TOXICOLOGY

Medical chemistry, in its two departments, physiological and clinical chemistry, is taught in recitations, in a demonstration course, and in practical work in the laboratory. Every week there are three recitations of one hour each, and two hours in the class-room, where the laboratory experiments are demonstrated and discussed, besides sixteen hours required in the laboratory.

The student first acquires a familiarity with proteins, carbohydrates, and fats,—the bases of food-stuffs and of all animal tissue,—and then a thorough knowledge of salivary, stomachic, and pancreatic digestion. Then follows the examination of blood, milk, gastric contents, urine, bile, and feces, normal and abnormal.

In all this work the practical and clinical bearings which most concern a physician are kept constantly in the foreground.

PATHOLOGY

The work in pathology and bacteriology will occupy the attention of the students during the second half of the second year. The instruction in pathology will consist of lectures, recitations, demonstrations, and practical laboratory work. It will be the aim to develop in the student a thorough knowledge of the causes, course, and results of pathological processes. Daily lectures (five times a week) will be supplemented by daily recitations, based upon a syllabus covering the subjects of general pathology and special pathology.

Demonstrations of gross pathological specimens, obtained from operations and autopsies at the Boston City Hospital, the Massachusetts General Hospital, and other institutions, will

be held frequently, as material is obtained. The supply of fresh material is very large, and it is usually possible to illustrate all of the common disease processes and many of the rare lesions, during the time when the class is at work. The work will include active participation by the students, who will be expected to section, study, and report upon specimens. Instruction in autopsy technique will be given in the amphitheatre of the School.

The work in pathological histology will include three hour-exercises daily, five times a week. Students will mount and make drawings of sections obtained from human and experimental lesions, comprehending all the important subjects of general and special pathology. Considerable attention will be paid to surgical pathology. Preserved gross specimens illustrating the lesions studied will be demonstrated in connection with the laboratory exercises.

Written recitations will be held, without notice, at irregular intervals throughout the term. The standard attained by the student in these exercises will influence his final mark in the subject. Final examinations will be held at the end of the year, three hours of written and two hours of practical work. A report on gross specimens may be included.

Microscopes will be loaned to students for a small fee.

BACTERIOLOGY

Bacteriology is taught as a companion study with pathology. As infectious processes are taken up, the bacterial causes are studied in connection with the pathology of the diseases that they produce, in such a way that a comprehensive view of the cause and effect may be obtained. Attention is paid to the technical details of laboratory work. The methods of bacterial action, the elaboration of toxines, the subject of immunity, and the important bearings of asepsis, antisepsis, and disinfection are especially emphasized. Particular attention is also paid to all practical bacteriological tests used in medicine.

The bacteriological laboratory presents adequate facilities for the intelligent demonstration of this subject. In addition

to the usual laboratory work, facilities are afforded students for individual work. In connection with the demonstration of gross pathological specimens, a study of bacteria present is made, both by smear and culture. The recitations in this subject will include both oral and written exercises, and practical examinations will be held throughout the year.

The final examination will consist of two hours of written and one hour of practical work. The practical examination will consist of the examination of an unknown specimen, requiring the application of a bacteriological test of clinical value.

THEORY AND PRACTICE OF MEDICINE

The work prescribed in the department of general medicine has been carefully planned. As the studies of the second year are intended to prepare the student for the study of the theory and practice of medicine, so is this course intended to prepare for the clinical courses of the fourth year. To this end a systematic series of lectures is offered, including such general diseases as are not considered in the special courses. Three hours a week are devoted to these lectures. They comprise a detailed description of each of the diseases under consideration. The diseases are discussed upon the uniform plan of a description of the affection, its synonyms, history, cause, pathological changes, symptoms, complications, diagnosis, prognosis, prevention, and treatment. Supplementary to these lectures, a weekly quiz class is held. By such thorough and systematic study of the diseases he is to meet in the clinical work of the fourth year, the student is prepared to appreciate in the fullest degree the varying phenomena of daily practice.

SURGERY

Instruction in surgery consists of two lectures weekly, on the general principles and practice of surgery, one recitation every week from the text-book, and two one-hour examinations, in addition to the final examination, at intervals during the year. Students of the Junior class, in small sections, attend the various surgical clinics of the school, preparatory to the regular clinical work of the Senior year. They are expected to attend the clinical

lecture at the Boston City Hospital every Wednesday morning, and are invited to be present at the clinical conferences of the Senior class, but are not allowed to take active part in the discussions. All students who have not already taken the course in bandaging and apparatus must make arrangements with the demonstrator to take this course before the termination of their Junior year. At some time after the course in bandaging and surgical technique, but before graduation, each student must present a certificate stating that he has served satisfactorily as surgical dresser for at least one month in some institution approved by the Faculty.

OBSTETRICS

Instruction in obstetrics consists of lectures, recitations, conferences, and clinical teaching. Lectures are illustrated by plates and the use of the manikin. Each student is required to care for at least two cases (clinical instruction being given with one of these), attending them throughout convalescence, and handing in a written report. Some of these reports will be read before the class, and subjected to discussion and criticism by class and instructor.

PULMONARY DISEASES AND CLIMATOLOGY

A chair of pulmonary diseases and climatology was established some years ago, and Dr. Edward O. Otis, Physician to the Free Home for Consumptives and the tuberculosis department of the Boston Dispensary, formerly president of the American Climatological Association, was elected as the head of this department. Medical climatology will receive special attention in relation to the climatic treatment of tuberculosis. The methods of sanatorium treatment will be discussed, and one or more sanatoriums visited during the year.

A limited number of students of the fourth year who desire to assist at the tuberculosis clinic of the Boston Dispensary will have opportunity to do so, and should apply to Dr. Otis. In this department special attention is devoted to pulmonary tuberculosis, concerning which instruction is given, both by didactic

and clinical lectures, to the students of the third and fourth years. Special clinical instruction, with opportunities for the physical examinations of patients, will be given to the students of the third and fourth classes, in small sections, at the clinic for pulmonary diseases in connection with the Boston Dispensary, and at the Free Home for Consumptives. The detection, treatment, and prevention of pulmonary tuberculosis will be thoroughly studied in this class.

CLINICAL TUBERCULOSIS

A special elective course in clinical tuberculosis is given by Professor Otis during the months of January, February, and March. It will pay special attention to the early stages of the disease, and will deal generally with the diagnosis, prognosis, treatment, and prophylaxis of pulmonary tuberculosis. There will be at least twenty-five clinical exercises, and a required essay.

GYNAECOLOGY

Instruction in gynaecology is given both by lectures and clinical teaching. Lectures are given to the third-year students twice a week during the second term. Once a week a quiz is held on the lectures.

DISEASES OF CHILDREN

Instruction in the diseases of children consists of clinics, lectures, clinical conferences, quizzes, and visits to sick children at their homes. The clinical advantages offered to students in this department are great: examples of nearly all the affections of infancy and childhood are shown to the students, including such rare diseases as are seldom seen outside the clinics of a large city. A course of didactic and clinical lectures, including the anatomy and hygiene of infancy and children, is given, and also special clinical instruction in the auscultation and percussion of children, and in the contagious diseases. The members of the class are received in small sections.

ELEMENTARY HYGIENE

During the first half of the Freshman year, elementary hygiene is taught, together with the benefits to be derived from pure and wholesome associations, with the object of developing high moral, mental, and physical qualities.

HYGIENE AND SANITATION

Hygiene and sanitation are taught during the third year. The course includes public sanitation, industrial occupations, house and school construction and inspection, water supply, sewerage systems, disinfection, quarantine, preventable diseases, vital statistics, sanitary codes, and medical ethics.

Students in the fourth year will be instructed by Dr. Hollis in the chemical and microscopical examination of air, foods, water, and sewage, and demonstrations will be given to show the detail work of public health officers, with the object of qualifying graduates for such positions.

CLINICAL MEDICINE

The aim of the work in clinical medicine is to give the student a practical acquaintance with disease. The course begins in the latter half of the second year with instruction in auscultation and percussion. During the third and fourth years, instruction is given by lectures and recitations at the School, by clinical lectures at the Boston City Hospital and the Boston Dispensary, and by clinics at various places to which the students are assigned in small sections. These clinics are held in the wards of the Boston City Hospital and the Free Home for Consumptives, in the out-patient department of the Boston City Hospital, the Carney Hospital, the St. Elizabeth's Hospital, and the Boston Dispensary. In addition the students of the Senior class make visits with district physicians of the Boston Dispensary, and are thus given opportunities to study the problems of treating patients at their homes.

Students of the Senior class are required to submit written reports on the careful study of two cases, assigned to them from the above clinics. These written reports are discussed with

the instructors at a clinical conference, held once a week during the Senior year.

The clinical exercises given by Professor Otis and his assistants in connection with pulmonary diseases constitute an important part of the instruction in clinical medicine. This work comes in the third and fourth years, with clinics at the Boston Dispensary and the Free Home for Consumptives.

Examinations are held as follows: second year, auscultation and percussion; third year,—three one-hour examinations,—pulmonary diseases, medical diagnosis, and haematology; fourth year, a final three-hour examination. The marks in clinical medicine through the course will be based on the practical work and the report of cases, as well as on the written examinations.

CLINICAL AND OPERATIVE SURGERY

The work in clinical and operative surgery consists of lectures, clinical work, conferences, and operative work on the cadaver. There is one clinical lecture a week throughout the school year, at which cases are presented, described, examined, and fully discussed. These lectures are arranged to give a systematic course in the surgery of special organs and portions of the body, and are demonstrated from the actual case, thus continuing and completing the surgical instruction of the third year. Students of the fourth-year class attend in sections the surgical clinics at the Boston City Hospital, the Boston Dispensary, the Carney Hospital, and St. Elizabeth's Hospital, from October 1 to May 15. At these exercises students make personal examination and report to the instructor, in this way becoming practically familiar with the methods of making diagnosis from personal contact with the patient. Students of the class also have opportunities of administering ether, of assisting at operations, and, with certain limitations, of performing minor operations.

Each student is assigned two clinical cases for conference. Each of these cases must be carefully studied and written out in detail, giving the diagnosis, prognosis, and treatment, and a thorough discussion of all points connected with the particular case. The most valuable of these papers are selected, and after

November 1 one conference is held each week, at which two papers are read and then freely discussed by the whole class.

The work in operative surgery consists of demonstrations on the cadaver, by the surgical staff, of all the important operations. Following these demonstrations the class is divided into small sections, and each student learns operative technique (ligation of arteries, amputations, and so on) by personal work, under the surveillance of the staff. It is intended that this course shall commence in November and continue daily until completed; but the continuous duration of the work is necessarily subject to the supply of available material.

CLINICAL GYNAECOLOGY

The abundant material at the Free Hospital for Women is utilized for the instruction of students of the fourth-year class. The almost continuous daily clinics (morning, afternoon, and evening) of the out-patient department provide an excellent course in methods of diagnosis and treatment of the diseases of women, superior to any other in New England. Each student receives nearly twenty hours of personal instruction at the clinics. In addition, the operations at this hospital, two days in each week, demonstrate all forms of major pelvic surgery. Clinical instruction is also given at the Boston Dispensary, at St. Elizabeth's Hospital, and at the Mt. Sinai Hospital. Weekly conferences are held during the second half-year, wherein papers are read by the students and discussed.

NEUROLOGY

The department of neurology is under the direction of Dr. Morton Prince. Like other special departments of the fourth year, the course embraces in its scope a required and an elective branch. The required course consists of clinical and didactic lectures given by Dr. Prince at the Boston City Hospital, once a week for twelve or fifteen weeks. This course is supplemented with lectures by Dr. Thomas, on the anatomy, physiology, and pathology of the nervous system, also one hour a week for twelve or fifteen weeks. The elective work, in addition to the

above, consists of clinical instruction, one or two hours a week, by Dr. Thomas. The student will have an opportunity to examine and study the patient for himself, thus becoming experienced in the methods of examination, and acquainted with nervous diseases as present in the subject. It will be the aim of the department to make this instruction as practical as possible.

NORMAL MEDICAL PSYCHOLOGY

A course of lectures in normal medical psychology is given to the fourth-year class, weekly, during the first half-year. Its aim is to discuss in their more general relations the principles of normal mental action, and to describe the mind as one of the two aspects or parts of every individual—in short, to discuss the relations of body and mind. Besides its own important value as science (and one the applications of which are seen in every hour of life), psychology is the indispensable basis of an understanding of the complex diseases of the mind and of the nervous system, just as physiology underlies practical medicine.

In addition, however, the course will discuss certain special topics of great practical importance to the medical practitioner: such topics for example as suggestability, temperament, mood, the numerous habits, sexual mental differences, will power, the emotions, pain and pleasure. Knowledge of subjects such as these prepares the student better to understand his patient as an individual, and so better to treat his disease. The course is given by Professor Dearborn, and in a way complements the instruction in physiology.

MENTAL DISEASES

Instruction in mental diseases will be afforded by a course comprising didactic and clinical lectures, to be given weekly from January to the middle of May. Ten or more clinics will be held at the Boston Insane Hospital, where a large number of patients are received annually. Two clinics will be given also at the Massachusetts School for Feeble-Minded, at Waverly. It will be the aim of this course to allow the students to

become familiar with the prevalent forms of mental trouble, the early symptoms of insanity, and with the methods of commitment. Especial attention will be given to mental defects in children.

Students are urged to prepare themselves for this course by taking the optional course offered in normal medical psychology.

LARYNGOLOGY

Instruction in the diseases of the nose and throat is both didactic and clinical. A systematic course of lectures is given to the third-year students in the amphitheatre of the School during the first half-year. These lectures are illustrated with colored diagrams, models, pathological specimens, and the exhibition of instruments. The opaque-projection apparatus is used at the close of each lecture.

Clinical instruction in laryngoscopy and rhinoscopy is given to small sections of the class at the Tremont Dispensary. This work is required.

An elective course, mainly practical, is given to the fourth-year students during the last half-year. Special attention is paid to the technique of instrumentation, also to general diagnosis and treatment. By the actual examination of cases the student is made familiar with the diseases the family physician is expected to treat. During this course the students see the more important operations of the nose and throat. Practical lectures are given at the School. The class will visit, in sections, the clinics of the Tremont Dispensary, and the Boston Dispensary.

OPHTHALMOLOGY

The course in ophthalmology will be of the most practical character possible, being designed to give the general practitioner such knowledge of the subject as is most essential to his practice. The lectures will be given twice a week, the first half of the school year. For clinical work the class will be divided into small sections, preparatory to instruction at the Massachusetts Charitable Eye and Ear Infirmary, and the Carney Hos-

pital. The fourth-year elective students will be given personal instruction by all members of the department throughout the school year.

ABDOMINAL SURGERY

Instruction is given in abdominal surgery, including appendicitis, hernia, and the major operations on the female pelvic organs, by two lectures and one quiz weekly to fourth-year students during the first term, and by demonstrations on the cadaver, clinical conferences, and attendance of subdivisions of the class at operations.

LEGAL MEDICINE

The course in legal medicine consists of twelve lectures—one each week. The prominent subjects presented will be the duty of the physician to the Commonwealth, and his rights; judicial investigations and the methods of procedure; the function of the expert witness and the ordinary witness; the phenomena and signs of death; causes of violent death; medico-legal views and autopsies; the identification of mutilated remains; malpractice, civil and criminal; personal injury suits; and testamentary capacity.

ORTHOPEDIC SURGERY

The work in orthopedic surgery consists of one lecture, four clinics, and one quiz each week of the first half-year, and of two exercises a week at the Carney Hospital during the second half-year, for those electing the subject. One of the clinics of the first half-year is in special orthopedic pathology. The work of the second half-year consists of practical exercises in diagnosis and treatment in the out-patient department, and of ward visits, with opportunity to see the operative work, especially the orthopedic surgery of the adult.

MERCANTILE AND MILITARY MEDICINE

The lectures in mercantile and military medicine are intended to acquaint the student with the duties peculiar to the army and the navy surgeon, and the life-insurance examiner. This

instruction is given in connection with the department of clinical medicine.

Professor Arnold gives the instruction in life-insurance examination. Assistant Professor Dearing, with the assistance of Dr. William C. Rucker, of the U. S. Marine Hospital Service, will give instruction in military medicine. The school has recently enlarged the course in military medicine, and believes that instruction in this branch is of great importance. The course includes twelve lectures, on the following topics:—

(1) Requirements for the admission of medical officers in the Army, the Navy, and the U. S. Marine Hospital Service.
(2) Examination of recruits.
(3) The ration.
(4) Organization and training of the Hospital corps.
(5) Water Supply. Preventive medicine.
(6) Military medicine, including camp hygiene.
(7) Quarantine; transport service.
(8) The rifle and its development. Gun-shot wounds.
(9) Military surgery in the Navy.
(10) Military surgery in the Army.
(11) The medical officer in the tropics.
(12) Demonstration of "first aid" work.

OTOLOGY

Instruction in otology consists of lectures on the anatomy, physiology, and pathology of the ear at the Massachusetts Charitable Eye and Ear Infirmary. These lectures are illustrated by Politzer's charts of the human ear, models, anatomical specimens of the temporal bone, bone-corrosion preparations, and microscopical sections of the organ of hearing.

Clinical and practical instruction in otology is given to small sections of the class at the close of each lecture. The students witness the examination and treatment of patients, are invited in class sections to be present at the major operations upon the ear, and to accompany the aural surgeon in his daily rounds through the wards.

An elective course for the fourth-year students consists of

clinical work at the Massachusetts Charitable Eye and Ear Infirmary, and the Carney Hospital.

DISEASES OF THE RECTUM

The course in diseases of the rectum will consist of weekly lectures during the first half-year, at the School, and clinical instruction every morning at the rectal department of the Boston Dispensary. Each student will have ample opportunity to examine patients, and in suitable cases to apply treatment. Especial attention will be paid to so-called "office treatment" of this class of diseases.

DERMATOLOGY

The instruction in dermatology will consist of weekly lectures, from January to April. Also, from January to June, there will be three weekly clinics at the Boston City Hospital, where cases of skin diseases will be shown to the class, with an opportunity for each student to examine the cases personally.

GENITO-URINARY DISEASES

The various diseases of the genito-urinary system will be considered and illustrated by cases, as far as practicable. Clinics in this branch are held in the genito-urinary department of the Boston Dispensary, from October 1 to April 1.

ELECTRO-THERAPEUTICS

The course in electro-therapeutics will consist of twelve lectures, with occasional quizzes. It will include a brief review of the principles of electro-physics, the nature, methods of production, and physiological action of the various forms of electrical energy, together with a brief discussion of their therapeutic uses and limitations.

Preparation

The work demanded by the first year of the Medical School is severe. It has been found that high-school preparation is frequently inadequate. Hence prospective students of medicine are earnestly advised to pursue at least one year of preparatory study after graduation from the high school and before entering upon distinctively medical studies. They will obtain thus a more thorough grounding, and will also familiarize themselves with the laboratory methods which form the basis of the work of the first and second years of the Medical School.

Tufts College is prepared to give instruction adapted to the needs of such persons. They may enter the College as special students, and it is suggested that the studies most valuable to them are chemistry, biology, physics, English, German, and French. The following is an outline of the studies advised for those who take one year in the College as preparatory to medicine:—

1. Biology 1. Two lectures each week on the general principles of biology and on the structure of animals and plants. Four hours of laboratory work. In the laboratory are dissected a dog-fish, a frog, a rat, and various invertebrates; in the second half-year, examples of the various groups of plants.

2. Chemistry 1. Two lectures and six hours of laboratory work, each week. The lectures cover general theoretical and descriptive inorganic chemistry. The laboratory work is devoted to the principal elements and their compounds.

3. Physics 1. Three lectures a week, on the general principles of physics.

4. English 1. Three hours a week of instruction in composition and rhetoric.

5. German 1. Three hours a week: grammar, reader, and written exercises.

6. French 1. Grammar, reader, and composition.

(French 2 or 3, or German 2 or 3, are advised for those who have had preliminary training.)

Requirements

FOR ADMISSION TO THE FIRST-YEAR CLASS

Candidates for admission to this School, except as hereafter stated, must pass a written entrance examination in English, algebra, plane geometry, physics, Latin, and one subject to be chosen from the following: American history, biology, chemistry, French, or German.

(*a*) English: a composition of two hundred words, to be criticised in relation to expression of thought, construction of sentences, punctuation, spelling, and handwriting. The subjects for the examination in 1906 will be chosen from the following:—

(1) Shakespeare's Merchant of Venice; (2) Thackeray's Henry Esmond; (3) Burke's Speech on Conciliation with America; (4) Scott's Ivanhoe.

Every candidate is expected to have read intelligently all the books prescribed.

(*b*) Algebra: the fundamental operations, factors, fractions, simple equations, simultaneous equations of the first degree, involution and evolution, exponents, and quadratic equations. Texts similar to those of Wells or Wentworth are suggested for study.

(*c*) Plane Geometry.

(*d*) Physics: an examination suited to those who have studied such text-books as Gage's Elements of Physics, or Carhart and Chute's Elements of Physics.

(*e*) Latin: a sight translation of elementary Latin; as, for example, the first fifteen chapters of Caesar's Commentaries, and the translation into Latin of easy English sentences involving the same vocabulary.

(*f*) American history, biology, chemistry, French, or German. The student is required to present himself for examination in *one* of these subjects.

Students who fail in one or more of these subjects may be admitted, subject to condition; but no student will be allowed

to commence his second year whose entrance conditions are not removed.

The entrance examinations are conducted at the Medical School building, under the supervision of an officer of the College of Letters.

They will be held on Monday, June 11, and on Saturday, Sept. 22, 1906, at 10 A.M.

EXCEPTIONS.—Graduates of approved colleges or universities, graduates of approved high and preparatory schools, and students holding Regents' certificates of the State of New York are admitted without examination.

Advanced Standing

Allowance is made for time, but no credit is allowed, for examinations passed at other medical schools. Students from such schools must present themselves at the fall examination, and take the examinations already passed by the class they desire to enter.

Students presenting evidence of a course equivalent to the course in general chemistry given in the first year in this School are regarded as having anticipated this subject, upon passing the fall examinations.

PROMOTION

To Second-Year Class

Students who have passed a majority of the first-year examinations, and who have removed all entrance conditions, are admitted to the second-year class. Students are required, however, to have qualified in General Chemistry before they are eligible to the Medical Chemistry of the second year.

To Third-Year Class

Students of the second-year class who have passed all the first-year examinations, and a majority of the second-year examinations, are admitted to the third-year class.

To Fourth-Year Class

Students of the third-year class who have passed all the exam-

inations of the first and the second year, and a majority of the subjects of the third year, are admitted to the fourth-year class.

GRADUATION

For the Degree of M.D.

Candidates for the degree of Doctor of Medicine must have fulfilled the following requirements:—

1. They must furnish certificates that they are twenty-one years of age.
2. The Faculty must be satisfied of their good moral character.
3. They must have attended four full courses of medical study at some accredited medical college, the last of which shall have been at this School as members of the fourth-year class, and no two courses in the same twelve months.
4. They must have passed all the required examinations, and have performed the required amount of laboratory and clinical work.
5. They must have satisfactorily dissected one half of the body, under the direction of a demonstrator of anatomy.
6. They must have paid all fees before the final examinations.

The final marks are derived from work in recitations, laboratories, clinics, and dissecting room, and from written examinations.

The Faculty reserve the right to change these requirements without further notice.

HONORS

Students who have attended four full courses of lectures at this School, and have obtained an average of 90 per cent. in their examinations, shall be eligible to "*summa cum laude*"; and students who have obtained an average of 80 per cent. shall be eligible to "*cum laude*," in connection with the degree received.

STANDING AND CERTIFICATES

Graduates of other regular medical schools in good standing may receive the degree of this School, after attending one course

of lectures and passing the examinations of the four years. It is understood that a course of lectures requires actual presence at a majority of the exercises of the session.

Students who do not wish a degree will be received for any portion of the course. Any student may obtain a certificate of work during his period of connection with the School.

OUTLINE OF THE COURSE

First Year

Anatomy.—Lectures, demonstrations, recitations, and dissecting. *Twenty hours a week during the first semester.*

General Chemistry.—Lectures, and required laboratory work. *Fourteen hours a week during the second semester.*

Physiology.—Recitations, lectures, demonstrations, conferences, experimental work in the laboratory, essays, and written tests. *Sixteen hours a week during the second semester.*

Histology.—Lectures, demonstrations, and required laboratory work. *Ten hours a week during the first semester.*

Hygiene.—Lectures on Elementary Hygiene, *ten hours.*

Final examinations upon these subjects occur at the close of the first and the second semester, respectively, of the first year.

Second Year

Materia Medica and Therapeutics.—Lectures and recitations. *Twelve hours a week during the first semester.*

Medical Chemistry and Toxicology.—Lectures and required laboratory work. *Sixteen hours a week during the first semester.*

Pathology.—Lectures, demonstrations, and required laboratory work. *Twenty-five hours a week during the second semester.*

Bacteriology.—Lectures and required laboratory work. *Five hours a week during the second semester.*

Normal Auscultation and Percussion.—Lectures and exercises during the second semester.

Final examinations upon these subjects are required at the close of the first and the second semester, respectively, of the second year.

Bandaging and Apparatus.

Third Year

Theory and Practice of Medicine.—Lectures, and recitations. *Four hours a week.*

Surgery.—Lectures and recitations. *Five hours a week.*

Obstetrics, including attendance upon two cases of labor. Lectures and recitations. *Five hours a week.*

Ophthalmology.—*Two hours a week.*

Gynaecology.—Lectures and recitations. *Three hours a week.*

Laryngology.—*Two hours a week.*

Pediatrics.—*Six hours a week.*

Hygiene.—*One hour a week.*

Medical Diagnosis.—*Two hours a week.*

Haematology.—*Twelve lectures.* Laboratory exercise, during the first semester.

Final examinations upon these subjects are required at the close of the third year. Third-year students who have creditably passed all their previous examinations will be allowed to take some of the fourth-year studies, subject to the approval of the Faculty.

Fourth Year

Clinical Medicine, Clinical Surgery, Abdominal Surgery, Clinical Gynaecology, Otology, Neurology, Dermatology, Diseases of the Rectum, Genito-Urinary Diseases, Orthopedic Surgery, Normal Medical Psychology, Mental Diseases, Electro-Therapeutics, and Legal Medicine.

The final examinations of the fourth year will consist of three-hour examinations upon Clinical Medicine and Clinical Surgery, and two electives to be chosen by the student from the above list, to which are added **Ophthalmology** and **Laryngology.** Abdominal Surgery, Electro-Therapeutics, and Legal Medicine cannot be taken as electives. There will be a one-hour examination in all the above subjects, except the four in which three-hour examinations are held.

EXAMINATIONS

There are two periods of examination held each year in the school building. Examinations are in writing, and are held during the week previous to the opening of the regular course of lectures in the fall, and at the close of the course in the spring.

The fall examinations are for

(*a*) Students commencing the study of medicine.

(*b*) Students applying for advanced standing.

(*c*) Students who failed in the spring.

The spring examinations are for promotion and graduation.

The entrance examination will be held at 10 A.M. on Monday, June 11, 1906, and on Saturday, Sept. 22, 1906.

Students conditioned in entrance requirements must remove their conditions upon these dates.

The entrance examinations are conducted at the Medical and Dental School Building on Huntington Avenue, Boston, under the supervision of an officer of the College of Letters.

Students intending to take the fall examinations for advanced standing, or for the removal of conditions, are requested to notify the Secretary on or before Sept. 10, 1906.

TEXT-BOOKS

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy.—Gray, Morris, Cunningham, Eisendrath, Haynes's Dissector.

Physiology.—Syllabus (for laboratory directions), Howell, Stewart's Manual, Landois, Brubaker, American Text-book, Kirke, Verworn, Schäfer, Hutchison.

General Chemistry.—Simons's Manual of Chemistry, Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis.

Medical Chemistry.—Rockwood's Manual, Syllabus, Simons's Physiological Chemistry, Dwight's Toxicology. Collateral Reading: Hammarsten's Physiological Chemistry, Peterson and Haines's Text-book of Legal Medicine and Toxicology.

Histology.—Syllabus, Böhm and Davidoff, Stohr.

Materia Medica and Therapeutics.—Hare, United States Dispensatory, Gerrish's Prescription Writing.

Pathology.—Syllabus, Stengel, Ziegler, Coplin, Mallory and Wright's Technique, Durck's Pathological Histology, Cohnheim, Green, American Text Book.

Bacteriology.—Syllabus, Muir and Richie, Park, Levy and Klemperer, McFarland, Abbott, Lehmann and Neumann, Sternberg.

Obstetrics.—Hirst, Reynolds, Jewett, American Text-book.

Gynaecology.—Greig-Smith, Byford, Dudley, Kelly, Reed.

Clinical Gynaecology.—Davenport, Dudley, Greig-Smith.

Surgery.—International Text-book, Wharton and Curtis, Roberts, Roswell Park, American Text-book, Stimson on Fractures and Dislocations, Scudder on Treatment of Fractures, Da Costa.

Clinical and Operative Surgery.—International Text-book, Roswell Park, American Text-book, Wharton and Curtis, Roberts, Bryant's Operative Surgery, Zuckerkandyl's Operative Surgery, Burrill and Blake.

Practice of Medicine.—Ander's Practice of Medicine, Osler, Tyson, Thompson, Strümpell, Eichhors.

Dermatology.—Diseases of the Skin by Hyde and Montgomery, Duhring, Stelwagon, Crocker, Kaposi, Besmer.

Hygiene.—Bergey, Principles of Hygiene; Egbert's Hygiene and Sanitation.

Clinical Medicine.—Osler's Practice of Medicine, Wood and Fitz's Practice, Musser's Medical Diagnosis, Tyson's Physical Diagnosis.

Neurology.—Church and Peterson, Oppenheim, Gower, Dana.

Normal Medical Psychology.—Maudsley, James, Ribot, Mercier.

Mental Diseases.—Brower and Bannister's Practical Manual of Insanity, Diefendorf's Clinical Psychiatry, Berkely's Mental Diseases, Wood's Reference Handbook on Insanity, Clousion's Clinical Lectures on Mental Diseases, Luke's Dictionary of Psychological Medicine, E. Regio's Practical Manual of Mental Medicine.

Pediatrics.—Holt's Diseases of Infancy and Childhood, Koplik's Diseases of Infancy and Childhood, Thompson's Clinical Examination and Treatment of Sick Children.

Laryngology.—Shurley, Coakley, Kyle, Knight.

Diseases of the Rectum.—Kelsey, last edition; Ball, last edition; Tuttle, Gant, second edition.

Orthopedics.—Bradford and Lovett, last edition.

Otology.—Buck, Politzer and Bennett's System of Diseases of the Ear, Throat, and Nose.

Ophthalmology.—Fuch, Swanzey, May.

Medical Dictionary.—Gould, Dunglison.

FEES AND EXPENSES

For tuition the uniform fee of *one hundred and fifty dollars* and an additional fee of *five dollars* for matriculation for each year will be required from all students entering the School during or after the academic year of 1904-05. To such students there will be no charge for anatomical material. The tuition fee may be paid in instalments, if desired, in which case an additional charge of five dollars is made. The first payment of eighty dollars, which includes the matriculation fee, must be

lars. By doing this work in the summer, the new student can anticipate part of the regular course and thus gain valuable time in the busy first year.

HISTOLOGY

A summer course in histology will be given under the direction of Professor Bates. Particulars as to the scope of this work, and the fee, may be learned upon application to Dr. Bates.

MEDICAL CHEMISTRY

A summer class in medical chemistry is conducted by Dr. Thorpe. The work consists of the entire laboratory part of the regular winter work. The class is open to all, but is particularly designed to give the first-year students of the previous winter an opportunity to do advance work. They are permitted to take the laboratory part of the examination in the following autumn, and the written part in the next following spring, after attending the winter's lectures and recitations. The work begins on the first Monday following the 5th of June, and continues eight weeks. The fee is twenty-five dollars.

REGISTRATION

All students joining the School for the first time must furnish the Secretary with the application blank, properly filled. *All students must fill out and deposit a registration blank before October 6, 1906.*

Requests for the annual Announcement, and all other communications relating to the business of the School, should be addressed to FREDERIC M. BRIGGS, M.D., Secretary of Tufts College Medical School, Boston, Mass.

THE DENTAL SCHOOL

Faculty of the Dental School *

FREDERICK WILLIAM HAMILTON, A.M., D.D. . . Tufts College
ACTING PRESIDENT

HAROLD WILLIAMS, A.B., M.D., LL.D. . . . . 528 Beacon St.
DEAN, *and Professor of the Theory and Practice of Medicine*

FREDERIC MELANCTHON BRIGGS, A.B., M.D.
31 Massachusetts Ave.
SECRETARY, *and Professor of Clinical Surgery*

CHARLES PAINE THAYER, A.M., M.D. . . . . 69 Gainsboro St.
Professor of Anatomy, Emeritus

HENRY JABES BARNES, M.D. . . . . 429 Beacon St.
Professor of Hygiene

CHARLES ALFRED PITKIN, A.M., PH.D. . . . . South Braintree
Professor of General Chemistry

EDWARD WALTER BRANIGAN, A.M., D.D.S.
Professor of Clinical Dentistry 2 Commonwealth Ave.

FRANK GEORGE WHEATLEY, A.M., M.D. . . . . North Abington
Professor of Materia Medica and Therapeutics

JOSEPH KING KNIGHT, D.D.S. . . . . Hyde Park
Professor of Prosthodontia

GEORGE ANDREW BATES, M.Sc., D.M.D. . . . . Auburndale
Professor of Histology

FREDERICK MORTIMER HEMENWAY, D.D.S. . 175 Tremont St.
Professor of Prosthetic Dentistry

WILLIAM ELISHA CHENERY, A.B.,M.D. . . 222 Huntington Ave.
Professor of Diseases of the Nose and Throat and Instructor in Oral Syphilis

TIMOTHY LEARY, M.D. . . . . 20 Sunset St., Roxbury
Professor of Pathology and Bacteriology

EUGENE THAYER, A.M., M.D. . . . 2683 Washington St., Roxbury
Demonstrator of Anatomy

* When only street and nnmber are given in the address, the street is in Boston. With the exception of the President, the Dean, and the Secretary, the names are arranged as far as possible in the order of academic seniority.

GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D.
Professor of Physiology 6 Mason St., Cambridge

BYRON HOWARD STROUT, D.D.S. . . . . Taunton
Assistant Professor of Operative Technics and Instructor in Anaesthesia

WALTER IRVING BRIGHAM, D.M.D. . . . . South Framingham
Assistant Professor of Operative Dentistry

HARRY HOMER GERMAIN, M.D. . . . . 4 Arlington St.
Assistant Professor of Anatomy

OTHER INSTRUCTORS

EDGAR OSGOOD KINSMAN, D.M.D. . . 15 Brattle Sq., Cambridge
Instructor in Clinical Dentistry

GEORGE T. BAKER, D.D.S. . . . . 149A Tremont St.
Lecturer on Orthodontia

FRED CARVILL MERRILL, D.D.S. . . . . Wollaston
Instructor in Prosthetic Dentistry

GEORGE LYLE MARSHALL, D.D.S. . . 21 Warren St., Somerville
Instructor in Prosthetic Dentistry

HENRY MARTIN HILLS, D.D.S. . . . . 2 Commonwealth Ave.
Instructor in Clinical Dentistry

WILLIAM RICE, D.D.S., D.M.D. . . . . 845 Boylston St.
Instructor in Clinical Dentistry

WILLIAM PRESTON HOUSTON, D.M.D. . . . . 419 Boylston St.
Instructor in Clinical Dentistry

WALTER F. KENYON, D.D.S. . . . . Providence, R. I.
Instructor in Clinical Dentistry

HENRY HILDRETH PIPER, D.M.D. . . . . Winter Hill, Somerville
Instructor in Clinical Dentistry

FREDERICK WARREN PEARL, A.B., M.D.
Hotel Vendome, Commonwealth Ave.
Assistant Demonstrator of Anatomy

KNUT JOSEPH LUTTROPP, D.D.S. . . . . 419 Boylston St.
Instructor in Porcelain Work

JOHN WOOD FORBES, D.M.D. . . . . 419 Boylston St.
Instructor in Clinical Dentistry

CHARLES DAVISON KNOWLTON, M.D. 574 Warren St., Roxbury
Instructor in Pathology and Bacteriology

JOSEPH LEE CLAIR TAYLOR, D.D.S. . . . . 108 Dudley St.
Instructor in Clinical Dentistry

GUY M. WINSLOW, A.B., PH.D. . . . . Auburndale
Instructor in Histology

WILLIAM MARTIN FLYNN, D.M.D.
Instructor in Clinical Dentistry 474D Broadway, S. Boston

JOHN HANCOCK EATON, D.D.S. . . . . Warren Chambers
Instructor in Clinical Dentistry

DANA JOSEPH EDMUNDS, D.D.S. . . . . 2 Commonwealth Ave.
Instructor in Clinical Dentistry

THEODORE CHAPIN BEEBE, JR., A.B., M.D. . . 416 Marlboro St.
Assistant Demonstrator of Anatomy

DANA J. EDMUNDS, D.D.S. . . . . 2 Commonwealth Ave.
Instructor in Orthodontia

BURLEIGH CHILDS GILBERT, D.D.S. . . . . Stoneham
Instructor in Clinical Dentistry

WILLIAM GRAY ADAMS, M.D. . . . . 101 Newbury St.
Assistant in Anatomy

GEORGE FRANCIS McINTIRE, M.D. . . . . Cambridge
Assistant Demonstrator of Anatomy

ERVIN ARTHUR JOHNSON, D.M.D. . . . . 176 Federal St.
Instructor in Clinical Dentistry

FREDERICK BOOTH STEVENS, D.D.S. . . Everett Sq., Hyde Park
Instructor in Clinical Dentistry

HENRY STETSON ROBINSON, D.D.S. . . . . Attleboro
Instructor in Clinical Dentistry

ALFRED PAUL ROGERS, D.D.S. . . . . Fall River
Instructor in Orthodontia

ROBERT EATON ANDREWS, A.B., M.D. . . . . Cambridge
Assistant Demonstrator in Anatomy

JOHN WARREN LANE, A.B., M.D. . . . . 665 Boylston St.
Assistant Demonstrator of Anatomy

LUTHER GORDON PAUL, M.D. . . . . 657 Boylston St.
Assistant Demonstrator of Anatomy

ARTHUR THORNTON LEGG, M.D. . . . . 535 Beacon St.
Assistant Demonstrator of Anatomy

GEORGE VAN NESS DEARBORN, A.M., M.D., PH.D.
Professor of Physiology 6 Mason St., Cambridge

BYRON HOWARD STROUT, D.D.S. . . . . Taunton
Assistant Professor of Operative Technics and Instructor in Anaesthesia

WALTER IRVING BRIGHAM, D.M.D. . . . . South Framingham
Assistant Professor of Operative Dentistry

HARRY HOMER GERMAIN, M.D. . . . . 4 Arlington St.
Assistant Professor of Anatomy

OTHER INSTRUCTORS

EDGAR OSGOOD KINSMAN, D.M.D. . . 15 Brattle Sq., Cambridge
Instructor in Clinical Dentistry

GEORGE T. BAKER, D.D.S. . . . . 149A Tremont St.
Lecturer on Orthodontia

FRED CARVILL MERRILL, D.D.S. . . . . Wollaston
Instructor in Prosthetic Dentistry

GEORGE LYLE MARSHALL, D.D.S. . . 21 Warren St., Somerville
Instructor in Prosthetic Dentistry

HENRY MARTIN HILLS, D.D.S. . . . . 2 Commonwealth Ave.
Instructor in Clinical Dentistry

WILLIAM RICE, D.D.S., D.M.D. . . . . 845 Boylston St.
Instructor in Clinical Dentistry

WILLIAM PRESTON HOUSTON, D.M.D. . . . . 419 Boylston St.
Instructor in Clinical Dentistry

WALTER F. KENYON, D.D.S. . . . . Providence, R. I.
Instructor in Clinical Dentistry

HENRY HILDRETH PIPER, D.M.D. . . . . Winter Hill, Somerville
Instructor in Clinical Dentistry

FREDERICK WARREN PEARL, A.B., M.D.
Hotel Vendome, Commonwealth Ave.
Assistant Demonstrator of Anatomy

KNUT JOSEPH LUTTROPP, D.D.S. . . . . 419 Boylston St.
Instructor in Porcelain Work

JOHN WOOD FORBES, D.M.D. . . . . 419 Boylston St.
Instructor in Clinical Dentistry

CHARLES DAVISON KNOWLTON, M.D. 574 Warren St., Roxbury
Instructor in Pathology and Bacteriology

JOSEPH LEE CLAIR TAYLOR, D.D.S. . . . . 108 Dudley St.
Instructor in Clinical Dentistry

GUY M. WINSLOW, A.B., PH.D. . . . . Auburndale
Instructor in Histology

WILLIAM MARTIN FLYNN, D.M.D.
Instructor in Clinical Dentistry 474D Broadway, S. Boston

JOHN HANCOCK EATON, D.D.S. . . . . Warren Chambers
Instructor in Clinical Dentistry

DANA JOSEPH EDMUNDS, D.D.S. . . . . 2 Commonwealth Ave.
Instructor in Clinical Dentistry

THEODORE CHAPIN BEEBE, JR., A.B., M.D. . . 416 Marlboro St.
Assistant Demonstrator of Anatomy

DANA J. EDMUNDS, D.D.S. . . . . 2 Commonwealth Ave.
Instructor in Orthodontia

BURLEIGH CHILDS GILBERT, D.D.S. . . . . Stoneham
Instructor in Clinical Dentistry

WILLIAM GRAY ADAMS, M.D. . . . . 101 Newbury St.
Assistant in Anatomy

GEORGE FRANCIS McINTIRE, M.D. . . . . Cambridge
Assistant Demonstrator of Anatomy

ERVIN ARTHUR JOHNSON, D.M.D. . . . . 176 Federal St.
Instructor in Clinical Dentistry

FREDERICK BOOTH STEVENS, D.D.S. . . Everett Sq., Hyde Park
Instructor in Clinical Dentistry

HENRY STETSON ROBINSON, D.D.S. . . . . Attleboro
Instructor in Clinical Dentistry

ALFRED PAUL ROGERS, D.D.S. . . . . Fall River
Instructor in Orthodontia

ROBERT EATON ANDREWS, A.B., M.D. . . . . Cambridge
Assistant Demonstrator in Anatomy

JOHN WARREN LANE, A.B., M.D. . . . . 665 Boylston St.
Assistant Demonstrator of Anatomy

LUTHER GORDON PAUL, M.D. . . . . 657 Boylston St.
Assistant Demonstrator of Anatomy

ARTHUR THORNTON LEGG, M.D. . . . . 535 Beacon St.
Assistant Demonstrator of Anatomy

WALTER FREEMAN NOLAN, M.D . . . . . 535 Beacon St.
Assistant Demonstrator of Anatomy

ADELAIDE OLGA CUSHING-LEARY, M.D.
Assistant in Pathology and Bacteriology . . 20 Sunset St., Roxbury

IRVING JOSIAH WETHERBEE, D.M.D. . . . . 120 Bolyston St.
Instructor in Clinical Dentistry

WALTER GEORGE BRIDGE, D.M.D.
Cor. Boylston St. and Massachusetts Ave.
Instructor in Prosthetic Dentistry

JOHN DONOVAN CLARK, B.S., M.D. . . . . Auburndale
Instructor in Anatomy

FRANK EUGENE HASKINS, M.D. . . . . 254 Huntington Ave.
Assistant Demonstrator of Anatomy

VARNEY ALBERT KELLEY, D.M.D. . . . . 21 Maple St., Danvers
Instructor in Clinical Dentistry

CURTIS WILLIAM FARRINGTON, D.M.D. . 246 Huntington Ave.
Instructor in Clinical Dentistry

JAMES PROCTOR LOCKHART, D.M.D.
Instructor in Clinical Dentistry 837 Massachusetts Ave., Cambridge

SIDNEY BURT SARGENT, D.M.D. . . . . Rockland
Instructor in Clinical Dentistry

MARGARET ELIZABETH CARLEY, M.D. Washington St., Brighton
Assistant in Physiology

CAREY ROSCOE CHESTER, D.M.D. . . . . Malden
Instructor in Clinical Dentistry

IOAN ALEXIS TEOFIL CENTERVALL, D.M.D . . . Park Square
Instructor in Clinical Dentistry

WALTER LITTLEFIELD RIPLEY, M.D. . . . . Newton
Instructor in Physiology

EDISON WILLIAM BROWN, M.D. . . . . 406 Ruggles St.
Assistant in Pathology and Bacteriology

LEON SAMUEL MEDALIA, M.D. . . . . 1070 Boylston St.
Assistant in Pathology and Bacteriology

SIDNEY CURTIS HARDWICK, M.D. . . . . Quincy
Instructor in Physiology

LABORATORY ASSISTANTS

Anatomy

GEORGE R. CALLENDER . . . . . Northfield
JAMES A. HONEIJ . . . . . Johannesburg, Transvaal

Physiology

RALPH W. E. COLE . . . . . Franklin Falls, N. H.
ELWIN H. WELLS . . . . . Rumney, N. H.
FRANK W. WHITE . . . . . Arlington
HOWARD A. LANPHER . . . . . Roxbury

Histology

FRANKLIN WELLS . . . . . Boston
MARION F. ALBRO . . . . . Providence, R. I.
WALTER H. YOUNG . . . . . East Dedham
SOLOMON H. RUBIN . . . . . Boston

General Chemistry

JOSEPH A. MEHAN . . . . . Lowell
ARDENNE A. STOTT . . . . . Reading
JOHN B. A. JOHNSON . . . . . Lowell
RAYMOD E. GATES . . . . . East Dedham
CHARLES A. DERBY . . . . . Boston

Pharmacology

WILLIAM J. BROWN . . . . . Boston
CHARLES SHAPIRO . . . . . Boston
DENNIS H. CARR . . . . . Boston
DOMIZIO A. COSTA . . . . . E. Boston
NATHAN ADDELSON . . . . . Boston

OTHER OFFICERS

HERBERT T. BROWN . . . . . Tufts College
Bursar

ALICE M. MOOAR . . . . . Hyde Park
Stenographer

MARY WRIGHT RICHARDSON . . . . . 11 Kenwood Road
Clerk of the Department of Clinical Dentistry

SARAH ELIZABETH MILLER . . . . . 7 Haviland St.
Clerk of the Department of Prosthodontia

FRANCES WILDER . . . . . 75 Rutland St.
Matron of the Department of Anaesthesia and Extraction

LILLIAN M. TATTAN . . . . . Somerville
Clerk to the Secretary

STANDING COMMITTEES OF THE DENTAL SCHOOL

ADMINISTRATION.—The President, Drs. Branigan and Bates

ADMISSION.—Drs. Leary, Bates, and Dearborn

NOMINATIONS.—Drs. Hemenway and Barnes

LIBRARY.—Drs. Knight and Bates

INSTRUCTION.—Drs. Knight, Branigan, Hemenway, and Bates

CATALOGUE.—Drs. Bates and Dearborn

WOMENS' ADVISORY COMMITTEE.—Drs. Elizabeth A. Riley, Olga Cushing-Leary, Edna Weil Dreyfus

The Dean and the Secretary are members of all the above committees, *ex officiis*

Tufts College Dental School

The Dental School, formerly the Boston Dental College, became an incorporate part of Tufts College in 1899, under a special act of the legislature. It was incorporated under its former name in 1868, and is a firmly-established dental school of thirty years' standing, with a large and distinguished body of alumni. Its transfer to Tufts College was in consequence of the new anatomical laws of the State, and because it was felt by its former board of trustees that the advance in dental education rendered it desirable that the more purely scientific portion of its curriculum should be pursued in connection with a medical school.

The course of instruction in this institution embraces three academic years of eight months each. The studies of the first year, and a portion of those of the second year, are given in connection with those of the Medical School. Instruction is by means of lectures, demonstrations, laboratory work, and recitations, in anatomy, physiology, histology, chemistry, materia medica, pathology, therapeutics, bacteriology, principles of surgery, theory and practice of dentistry, oral surgery, and in operative, clinical, and prosthetic dentistry, orthodontia, and dental technics.

The infirmary, under the personal direction of the Professor of Clinical Dentistry, assisted by a corps of demonstrators, is open daily through the year, except during a part of June, the whole of July and August, and a part of September. In the abundance and variety of its clinical material, it furnishes an unsurpassed opportunity for the study of oral surgery and of dentistry in all its branches.

The laboratory of the prosthetic department is provided with perfect facilities for every variety of dental work. Every student is required before graduation to present satisfactory

specimens of the different forms of mechanical work made by himself in the laboratory of the School, and under the supervision of the Professor of Prosthetic Dentistry.

The library of the School contains many medical and dental books and periodicals, and is being constantly increased, the aim being to add the new and important books in the various departments as they are issued. The library is open for reference, and books are loaned to students. All the students are earnestly requested to make use of this privilege. Students also have access to the Boston Public Library, which contains one of the largest collections of scientific works in the United States.

Further opportunities for instruction are furnished by the valuable clinics and operations at the large hospitals of the city, which can be visited by the matriculates of this institution. Numerous operations upon the face and oral cavity are performed before students on public operating-days, and all connected with the School are urged to avail themselves of the facilities thus offered.

THE NEW BUILDING

A description of the building occupied by the Tufts Medical and Dental Schools is given on page 229. Special attention is called to the new dental infirmary, which occupies the first floor of the dental wing. This room, 125x29 feet, is equipped and arranged in a manner similar to the operating room of a hospital; aseptic chairs, cuspidors, and brackets have been especially constructed for this School; steam sterilizers are provided for the disinfection of instruments; and it is believed that by these modern applications of asepsis to dentistry the new infirmary is among the most complete dental infirmaries in this country. The prosthetic department, which corresponds in size to the infirmary, is equipped in the most approved modern fashion. For this department, electric power is supplied. The lower floor of the dental wing is devoted to operative technics (see page 268), and to the department of anaesthesia and extraction. In the latter department, the most improved appara-

tus for the administration of nitrous-oxide is provided, and there is a recovery room under the charge of a professional nurse, who is in daily attendance. A surgeon connected with the Medical School is present on occasions when ether is administered.

Subjects of Instruction

ANATOMY

The course is identical with that given the medical students, and is taken with them. See page 229.

CHEMISTRY

The work in chemistry is divided into two parts. During the second half of the first year it is the same as is given to the students of the Medical School. See page 231.

During the second year this preliminary training in chemistry is followed by lectures, recitations, and laboratory work in dental chemistry. The metals, with their alloys and salts as used in dentistry, the bones and the teeth, the saliva, and the chemistry of the mouth are carefully studied. The high importance of the many applications of chemistry to the dental profession is fully recognized.

PHYSIOLOGY

The course in Physiology is given throughout the latter half of the first year. See page 230.

HISTOLOGY

The subject of histology covers the first half of the first year. The work during the first half of the allotted time will be identical with that of the students in the Medical School. This part of the subject covers the study of the elementary tissues, treated comprehensively, beginning with their origin in the embryo. Dental histology will be taught during the second year. In this connection particular attention will be given to the study of the minute anatomy of the tooth. The develop-

ment of the teeth will also receive careful treatment. A training which gives the student a knowledge of the origin and history of the dental germ lays a suitable foundation for the dentist.

The department is equipped with microscopes which, on the payment of a small fee, will be at the service of such as cannot furnish instruments of their own.

ELEMENTARY HYGIENE

See page 238.

OPERATIVE DENTISTRY

In operative dentistry the instruction is both didactic and clinical. Lectures are given covering the whole field, familiarizing the student with all known methods, the conditions under which different filling materials are used, and the most approved manipulation of the same. Many lectures are followed by clinics before divisions of the classes, where attendance is obligatory. By this means every detail of the operation is impressed upon the mind of the student. Great emphasis is placed upon the preparation of cavities for filling. Instruction is further given concerning the pathological conditions of the mouth and the treatment of the same, exposed pulps, inflamed pulps, dead pulps, abscesses, inflammation of the peridental membrane, and allied subjects. Special attention is given to the preparation of cavities for porcelain filling, and the manipulation of the same. Prophylaxis also is taught, under improved systematized methods.

OPERATIVE TECHNICS*

The technical laboratory is situated on the lower floor, and is exceptionally well lighted from three sides. It is equipped with benches having lock drawers for each student, and has power lathe and other implements for convenient use.

Instruction in this course will be by lectures, illustrated by models and drawings, and by practical work on the part of the student. The student's work will include the study of the

* NOTE.—The operations in the technical departments require a very large number of natural teeth, and a sufficient supply is sometimes difficult to get. It will therefore be to the interest of students if they will bring with them all the extracted teeth they can obtain.

forms of teeth, with carving in ivory; study of the position and form of pulp chambers and canals, with dissection of teeth; proper methods of treating and filling pulp canals, with operations on extracted teeth. Porcelain inlay work, with practical examples, also proper methods of forming cavities for filling, and the manipulation of all filling materials, will be included.

CLINICAL DENTISTRY

The method of instruction in clinical dentistry is by clinical lectures to the students of each class, accompanied by practical demonstration of various operations on the teeth and neighboring tissues.

Ample opportunity for work in practical operative dentistry is furnished in this department, and the student, by actual practice, receives training in the various dental operations, and in the diagnosis and treatment of diseased conditions of the mouth and teeth.

PROSTHODONTIA

The instruction in prosthodontia consists of a graded course of didactic lectures to the entire class, illustrated by models and diagrams, on the nature, properties, and manipulation of the various materials used in making artificial dentures, crowns, and bridge-work, preparatory to, and in harmony with, the laboratory work in prosthetic dentistry. These lectures extend through the three years of the course.

PROSTHETIC DENTISTRY

Particular attention is given to practical manipulation of vulcanite, celluloid, aluminum, and cast metal, for dentures; to gold-plate work, and the application of continuous gum to platina; and to crown and bridge work. The natural form, color, and arrangement of the teeth, together with the entire range of procedure, from taking the impression to the completion of the case and its proper adjustment in the mouth, are thoroughly demonstrated.

ORTHODONTIA

The instruction in the department of orthodontia consists of illustrated lectures dealing with normal development of both temporary and permanent teeth and adjacent tissues, compared with mal-development; also the etiology and treatment of the various deformities of the mouth and teeth.

In addition, the student will be taught the technique and management of practical cases, under the direction of the instructors.

PHARMACOLOGY

See page 232.

PATHOLOGY AND BACTERIOLOGY

The subjects of pathology and bacteriology will be considered together. This method permits showing the relation of bacteria to the disease processes which they produce. The work will consist of lectures, required laboratory work, and demonstrations. The student is made acquainted with the bacteria of the mouth, and is required to cultivate and study the important organisms. He is expected to carry out experiments to demonstrate the production of artificial caries. The subject of general pathology will be thoroughly covered. The special pathology of the mouth, and of the respiratory and intestinal tracts, will be given particular attention. Inflammation, especially the infectious types, among which are the lesions produced by the pyogenic bacteria, will be given particular attention. The process of repair in soft tissues and bone, and tumors of the mouth and face, are studied from sections of human and experimental lesions, and illustrated by demonstrations of gross specimens. In connection with the study of infectious processes, the specific bacteria will be cultivated and studied. Diseases of the circulatory system are illustrated by lectures and gross demonstrations. The methods of sterilization and their relative efficacy are practically studied, and tests are made of a large series of antiseptic and disinfectant substances.

The pathological and bacteriological department of the School occupies over four thousand square feet of floor space, with a

frontage of one hundred and sixty feet. It is excellently lighted. The laboratory furnishes accommodation for one hundred students, and is supplied with all the materials necessary for thorough work.

THEORY AND PRACTICE OF DENTISTRY

The instruction in the theory and practice of dentistry is designed to teach the most advanced scientific discoveries in relation to this art.

It will include such subjects as the action of mouth bacteria, diseases dependent upon dental lesions, dental prophylaxis, oral hygiene, and the ethics of dental practice. The course will be arranged to harmonize with and to supplement the work of the clinical department.

THEORY AND PRACTICE OF MEDICINE

The work in the theory and practice of medicine consists of a series of lectures given to the dental students by members of the Faculty and Board of Instruction of the Medical School. It is intended to include such subjects as general infectious and contagious diseases; syphilis; stomatitis and tonsilitis; diseases of the heart, kidneys, and skin; neuralgia and neurasthenia; disorders of the alimentary tract; pregnancy; tuberculosis. Lectures upon legal medicine and other subjects will be given. It is believed that a course of this description will be of the utmost practical value to dental students, as it will make them acquainted with the nature of a large class of diseases and conditions which they are liable to meet in the practice of dentistry. It is expected that Drs. Williams, Otis, Austin, Arnold, White, Stowell, Chenery, and Howe, of the Medical School, will contribute to this series of lectures.

SURGERY

The course in surgery will consist of a systematic series of lectures covering its principles. These lectures will explain the fundamental facts which should be thoroughly understood by all students who propose to treat any portion of the human body. The lectures will not be limited to surgery of the mouth, al-

though especial attention will be given to this portion of the subject, but are intended to give the dental student a sound knowledge of surgery in general.

Asepsis and anaesthesia will be minutely discussed, and practically demonstrated in the infirmary, in conjunction with the Professor in Operative Technics and Anaesthesia. The student will be carefully instructed in the administration of ether and of nitrous-oxide gas. In addition to the daily instruction, one morning in each week will be devoted wholly to this work, the class being divided into sections. At this weekly demonstration, cases will be presented exemplifying the choice of an anaesthetic in the particular case. The danger signals of anaesthesia will be considered, and the proper treatment explained. Local anaesthesia will receive careful attention, and its limitations pointed out.

The technic of aseptic and antiseptic methods in dental work will be thoroughly explained, and shown in connection with the demonstrations of anaesthetics.

ANAESTHESIA AND EXTRACTION

The extracting room, a well-lighted apartment, is supplied with all needful instruments and appliances for extracting teeth and for the performance of the simpler operations in surgery. Ample waiting rooms are adjacent, and also rooms for the care of patients after anaesthesia. Administrations of nitrous-oxide gas and ether are made daily. The room is at all times under the personal supervision of the Instructor in Anaesthesia.

CLINICAL CONFERENCE

Each clinical conference consists in the reading of an essay upon some practical subject,—the written report of an actual case by a student of the Senior class,—at a meeting of the class presided over by a member of the Faculty. The report is intended to bring out all the features of the case with regard to such topics as its etiology, pathology, and treatment. When possible, the patient will be presented to the class for examination. The case is fully discussed by the members of the class and by the professor in charge.

POST-GRADUATE COURSE

A post-graduate course, consisting of lectures, demonstrations, and laboratory exercises in anatomy, physiology, histology and embryology, pathology and bacteriology, and syphilis is offered to graduates of approved dental colleges.

Graduates of this School who have previously received the degree of *Doctor of Dental Surgery* may be recommended for the degree of *Doctor of Dental Medicine*, upon passing a satisfactory examination at the completion of the course. The fee for the course is $30, to be paid to the Bursar at the time of registration.

Requirements

FOR ADMISSION

Candidates for admission to this School, except as hereafter stated, must pass a written entrance examination in the following studies: English, algebra, plane geometry, physics, and Latin, and one subject to be chosen from the following: American history, biology, chemistry, French, or German.

(*a*) English: a composition of two hundred words upon some subject of general interest; the same to be criticised in relation to thought, construction, punctuation, spelling, and handwriting. The subject for this examination in 1906 will be chosen from the following:—(1) Shakespeare's Merchant of Venice; (2) Thackeray's Henry Esmond; (3) Burke's Speech on Conciliation with America; (4) Scott's Ivanhoe. Every candidate is expected to have read intelligently all the books prescribed.

(*b*) Algebra: the fundamental operations, factors, fractions, simple equations, simultaneous equations of the first degree, involution and evolution, exponents and quadratic equations. Texts similar to those of Wells or Wentworth are suggested for study.

(*c*) Plane Geometry.

(*d*) Physics: an examination suited to those who have studied such text-books as Gage's Elements of Physics, or Carhast's and Chester's Elements of Physics.

(*e*) Latin: a sight translation of elementary Latin; as, for example, the first fifteen chapters of Caesar's Commentaries; also the translation into Latin of easy English sentences involving the same vocabulary.

(*f*) American history, biology, chemistry, French, or German. The student is required to present himself for examination in *one* of these subjects.

Students who fail in one or more of these subjects may be admitted, subject to condition; but no student will be allowed to begin his second year whose entrance conditions remain unsatisfied.

Exceptions: — Graduates of high and preparatory schools, graduates of colleges or universities, students holding certificates of entrance to a college or university, and those holding the Regents' certificate of the State of New York, will be admitted without examination.

ADVANCED STANDING

Students who have taken courses in other accredited dental schools are admitted to advanced classes upon presenting satisfactory evidence that they have passed the examinations required for the class they desire to enter.

Students presenting evidence of a course equivalent to the course in general chemistry given in the first year are allowed to anticipate the subject upon passing the fall examinations.

PROMOTION

Students who have passed a majority of the examinations of the first-year class, and all entrance conditions, may be promoted to the second-year class. Students who have passed all first-year and a majority of the second-year examinations may be admitted to the third-year class; but no student will be promoted to the fourth-year class who has not passed all the first and sec-

ond-year examinations, and a majority of those of the third year.

The Faculty reserve the right to change these requirements without further notice.

GRADUATION

Candidates for the degree of Doctor of Dental Medicine must have fulfilled the following minimum requirements: —

1. They must present a certificate that they are twenty-one years of age and of good moral character.

2. They must have attended at least three full courses of lectures in some accredited dental school, the last of which shall have been at this School, and no two courses in the same twelve months.

3. They must have passed all the examinations required, and have satisfied the professors of clinical and prosthetic dentistry of their ability to meet satisfactorily the requirements of the profession. They must also deposit with the Secretary of the Faculty a satisfactory specimen of mechanical work, prepared during the course under the supervision of the prosthetic department.

4. They must have satisfactorily dissected under the direction of a demonstrator of anatomy.

5. They must have paid all fees before the final examinations.

EXAMINATIONS

There are two periods of examination held each year in the School building. Examinations are in writing, and are held during the week previous to the opening of the regular course of lectures in the fall, and at the close of the course in the spring.

The fall examinations are for

(*a*) Students commencing the study of dentistry;
(*b*) Students applying for advanced standing;
(*c*) Students who failed in the spring.

The spring examinations are for promotion and graduation.

The entrance examinations will be held at 10 A.M. on **Monday**, June 11, 1906, and on Saturday, Sept. 22, 1906.

Students conditioned in entrance requirements must remove their conditions upon these dates.

The entrance examinations are conducted at the Medical and Dental School Building on Huntington Avenue, Boston, under the supervision of an officer of the College of Letters.

Students intending to take the fall examinations for advanced standing, or for the removal of conditions, are requested to notify the Secretary on or before Sept. 10, 1906.

The examinations in course are as follows:—

First Year. *Finals* in Anatomy, Physiology, General Chemistry, Histology, Operative Technics, and Elementary Hygiene.

Progress in Clinical and Prosthetic Dentistry and in Prosthodontia.

Second Year. *Finals* in Materia Medica, Pharmacology, Dental Chemistry, Pathology, Bacteriology, and Dental Histology.

Progress in Operative Dentistry, Clinical Dentistry, Prosthetic Dentistry, and Prosthodontia.

Third Year. *Finals* in Oral Surgery, Orthodontia, Theory and Practice, Operative Dentistry, Clinical Dentistry, Prosthetic Dentistry, and Prosthodontia.

TEXT BOOKS

The first book mentioned is preferred as a text-book, the others being recommended as collateral reading.

Anatomy:—Gray, Cryer's Internal Anatomy of the Face, Weisse, Quain, Morris, Black's Dental Anatomy.

Physiology.—Syllabus as guide to experiments, Stewart's Manual, American Text Book, Landois, Brubaker, Kirke, Porter, Verworn.

Chemistry.—Simons's Manual, Witthaus, Storer and Lindsay, A. H. Elliott's Qualitative Analysis, Mitchell's Dental Chemistry.

Dental Histology and Microscopy.—Syllabus, Stohr's Histology, Tome's Dental Anatomy (latest edition).

Pathology.—Syllabus, Miller's Micro-Organisms of the Human Mouth, Burchard's Dental Pathology.

Hygiene.—Egbert's Hygiene and Sanitation.

Materia Medica and Therapeutics.—Hare, Wood, Cushny, U. S. Dispensatory, Gerrish's Prescription Writing.

Orthodontia.—Malocclusion of the Teeth, Angle (7th edition), Orthodontia, Guildford (4th edition), Internal Anatomy of the Face, Cryer.

Practice of Surgery.—Park's System, Marshall's Injuries and Surgical Diseases of the Jaws, International Text-book of Surgery.

Dental Science and Operative Dentistry.—Kirk's Operative Dentistry, Garretson's Oral Surgery, Black's Dental Anatomy, Weeks's Operative Technics, American System of Dentistry, Harris's Practice of Dental Surgery, Taft's Operative Dentistry.

Prosthetic Dentistry.—Essig's American Text-book of Prosthetic Dentistry, Richardson's Mechanical Dentistry, Evans's Crown and Bridge Work, Gilbert's Vulcanite and Celluloid.

Bacteriology.—Abbott, Woodhead, Sternberg.

Medical Dictionary.—Dunglison.

EXPENSES

For tuition the uniform fee of *one hundred and fifty dollars*, and an additional fee of *five dollars* for matriculation for each year, will be required from all students entering the School during or after the academic year of 1906-07. There will be no charge for anatomical material. The *tuition fee* may be paid in instalments, if desired (in which case an additional charge of five dollars is made). The first payment of *eighty dollars*, which includes the matriculation fee, must be made in advance, and a second payment of *eighty dollars* must be made before February first. No student will be admitted to the exercises of the first half-year unless he shall have paid the first instalment, including the matriculation fee, and no student will be admitted to the exercises of the second half-year who has not paid the fees in full.

Postgraduate fee for graduates of other schools . .	$150.00
Single course	50.00
Postgraduate fee for graduates of this School . . .	60.00
Single course	30.00

No student will be allowed to take any of the final examinations until the Bursar certifies that all fees or charges of every kind are settled.

The Bursar of the College will be at the School for the pur-

pose of collecting fees, on Monday, Wednesday, and Friday, 2.30 to 5.00 P.M., from Oct. 1 to June 1.

There are no scholarships connected with the School.

The expenses of living in Boston vary according to the habits and desires of students, and need not exceed those in small cities and villages. Good board, including room, fire, and light, can be obtained near the school at from $4 to $7 a week. Near the school building are several excellent boarding places charging moderate prices. Students will not be allowed to occupy rooms in the city that are not approved by the Faculty.

OUTDOOR DEPARTMENT

Clinical Dentistry

For many years it has been the custom of the authorities of this School to furnish to certain charitable and penal institutions qualified dentists for the purpose of alleviating cases of actual suffering. Applications for an extension of this service should be made to E. W. Branigan, A.M., D.D.S., Department of Clinical Dentistry, Tufts College Dental School, Boston, Mass.

Prosthetic Dentistry

In a manner similar to the above it has been the custom of the authorities of this School to furnish to the inmates of certain institutions for the aged, at the nominal charge of the cost of materials, artificial teeth and appliances. Institutions desiring to avail themselves of the privilege should apply to F. M. Hemenway, D.D.S., Department of Prosthetic Dentistry, Tufts College Dental School, Boston, Mass.

STATE BOARD EXAMINATION

Students shall not take a State Board Examination in Dentistry previous to the time of final examinations of the third year, without a written permission from the Secretary of the Dental School.

General Information

The Tufts College Dental School is a member of the National Association of Dental Faculties, and conforms to its rules, as well as to those of the National Association of Dental Examiners.

All students must be registered and in attendance within ten days after the commencement of lectures.

SESSIONS

The annual course of lectures begins on the last Wednesday in September of each year, and continues until the last Wednesday in May. The session of 1906-07 will begin Wednesday, September 26, 1906, at 3 P.M.

VACATIONS

There are no exercises at the School during three days at Thanksgiving, Christmas week, the week beginning April 2, nor upon Washington's Birthday, Patriots' Day, and Memorial Day.

APPLICATIONS

Students intending joining the School for the first time must obtain from the Secretary an application blank, which they are required to fill out and return to him.

REGISTRATION

Registration is required of all students, yearly. Properly filled registration blanks for the year of 1906-07 must be deposited with the Secretary on or before October 6, 1906.

ANNOUNCEMENT

Requests for the annual Announcement, and all other communications relating to the business of the School, should be addressed to the Secretary, FREDERIC M. BRIGGS, M.D., Tufts College Dental School, Boston, Mass.

Summer Courses

The following laboratory subjects are offered during the summer months:—

PHYSIOLOGY

A course in physiology will be given during the months of June and July. The work will consist chiefly of laboratory exercises, lectures, and recitations, and will be adequate to the outlines and basal principals of physiology. The fee for this class will be twenty dollars, and early application to the head of the department is advisable, as the size of the class is limited.

HISTOLOGY

A summer course in histology will be given under the direction of Professor Bates. Particulars as to the scope of this work, and the fee, may be learned upon application to Dr. Bates.

THE BROMFIELD–PEARSON SCHOOL

The Bromfield-Pearson School

BOARD OF INSTRUCTION

FREDERICK W. HAMILTON, A.M., D.D., ACTING PRESIDENT

GARDNER C. ANTHONY, A.M., SC.D., DEAN
Professor of Technical Drawing

SAMUEL C. EARLE, A.M.
Assistant Professor of English

GEORGE F. ASHLEY
Instructor in Drawing

PHILIP M. HAYDEN, A.B.
Instructor in French

CHARLES E. STEWART, S.B.
Instructor in Shopwork

HOWARD R. WHITNEY, B.S.
Instructor in Mathematics

The Bromfield-Pearson School

The Bromfield-Pearson School is intended to meet the wants of young men whose preparation for an Engineering course may be deficient in one or more of the required branches, but whose practice and experience in the applied part of Engineering may qualify them to pursue college work while making up these deficiencies. By this means an engineering education is made possible to those who may have been deprived of the opportunities for obtaining the necessary preparation, or who may have allowed considerable time to elapse between the high school and the college course. A mature mind, industrious habits, and a keen appreciation of the value of the higher education in Engineering are essential qualifications for engaging in this work.

As it is the intention of the Trustees to limit the membership to those earnest and somewhat mature students who cannot afford the time ordinarily required in the fitting school, candidates will not be received from manual training and high schools.

There is no prescribed course of instruction, the studies being changed from year to year to meet the varying needs of the classes. It is generally possible, however, to review all of academic algebra, or plane and solid geometry, in one year. The entrance requirement in French can also be met in one year, and elementary work is given in English.

ADMISSION

Students intending to join the School must obtain from the Dean an application blank, which they are required to fill out and return. On receipt of this statement they will be informed as to the conditions of entrance and the program of studies which it will be possible to pursue.

REGULATIONS.

Students are subject to all the rules governing members of the College.

All preparatory work must be completed during the year, as no student will be admitted to the School for more than one year.

Students admitted to college classes will be required to obtain a somewhat higher per cent. than the minimum requirement for engineering students.

On the satisfactory completion of the preparatory work students will be given a certificate of admission to the College. They will also receive full credit for all college work done toward a degree.

The President and the Dean have final authority concerning admission, promotion, and discipline.

EXPENSES

The tuition fee is one hundred and twenty dollars a year, payable as follows: sixty dollars on or before October 15, and the remainder on or before March 15.

No part of the tuition fee will be refunded to pupils who for any reason withdraw from the school before the close of the term for which the fee is paid.

Students board in commons or in private families at $4.00 to $5.00. Furnished rooms may be had at $1.50 or $2.00 a week. Other expenses vary with the economy of each student. Students living in the College dormitories furnish their own rooms.

The following estimates represent the fixed annual expenses:—

Tuition	$120.00	$120.00
Half-room rent	15.00	75.00
Board, $4.00 to $5.00 a week (36 weeks)	144.00	180.00
Physical training		10.00
Books, instruments, and supplies	15.00	25.00
Total	$294.00	$410.00

For other information address GARDNER C. ANTHONY, Dean of the Bromfield-Pearson School, Tufts College, Mass.

The Harpswell Laboratory

INSTRUCTORS

J. STERLING KINGSLEY, S.D.
Director, and Professor of Biology

FRED D. LAMBERT, PH.D.
Assistant, and Instructor in Natural History

In 1898 summer instruction in biology was given at South Harpswell, Maine, and in 1901 the college erected a small laboratory at that point, enlarging it in 1902. The location is admirably adapted for biological research, since the fauna of Casco Bay is extremely rich. The laboratory is equipped with boats, dredges, glassware, apparatus, and reagents, for study on the lines of anatomy and embryology. There is also a small library of the most important works.

The laboratory will be open in 1906 from June 15 until the middle of September. Instruction will be given to students of Tufts College in zoology, botany, and beginning research. Instruction will commence July 3, and will continue six weeks. For each subject a fee of twenty-five dollars will be charged. Credit will be given for work completed as if the work had been taken at the College. Besides, there are a few private rooms for research students, the fee for these being fifteen dollars for the season.

South Harpswell is two hours by steamer from Portland. It is at the extremity of a narrow peninsula ten miles in length, and has a cool climate. There are several hotels and boarding houses, where board and rooms may be had at five dollars a week and upward.

A list of the students at the Harpswell Laboratory during the summer of 1905 follows the Register of Students.

For circulars and other information concerning the Harpswell Laboratory, inquiries should be directed to PROFESSOR J. S. KINGSLEY, Tufts College, Mass.

DEGREES AND HONORS

1904-1905

Forty-Ninth Annual Commencement

COMMEMORATION DAY

June 21, 1905

Celebrating the Semi-Centennial of Tufts College

HONORARY DEGREES CONFERRED

Doctors of Laws

William Lewis Douglas
Adna Romanza Chaffee
Kogoro Takahira
Herbert Parker
Carolyn Hazard
Flavel Sweeten Luther
William Edwards Huntington
Henry Lefavour
George Whitefield Chadwick
Henry Smith Noble
Albert Bushnell Hart
Henry Willard Bragg
Harold Williams
Charles Henry Leonard
Fred Scott Pearson
Almon Gunnison
Augustus Byington Church
William Blake Odgers

Doctors of Sacred Theology

James Drummond
Isaac Wallace Cate
Adoniram Judson Patterson
Warren Samuel Woodbridge
Dwight Munson Hodge
Clarence Edgar Rice
Richard Perry Bush
Fred Augustine Dillingham
Levi Moore Powers
Frank Oliver Hall

Doctors of Science

Henry Smith Pritchett
Luther Burbank
John Ripley Freeman
Gardner Chace Anthony
Milton Gerry Starrett
Herman Cary Bumpus
Sarah Frances Whiting

Doctors of Letters

Jane Lippitt Patterson
Horace Greely Wadlin
Caleb Benjamin Tillinghast
Robert Comfort Metcalf
Orlando Knapp Hollister
George Lewis Baxter
George Henry Martin

Masters of Arts

Thomas Cunningham
James Arthur Jacobs
Edward Walter Branigan
George Simonds Eveleth
Joshua Bennett Holden
John Shepard
Abraham Shuman
Henry Detrich Yerxa
Edward Issachar Comins
Thomas Henry Barnes

COMMENCEMENT DAY

June 20, 1905

DEGREES CONFERRED IN COURSE

Bachelors of Arts

Elias Benjamin Armstrong
John Thornton Atsatt
Vesta Louise Bailey
Ella Wallace Bowker
Fred Walker Burnham
Sara Lucy Buxton
Mellen Greely Calderwood
Henry Turner Claus
Carrie Alice Farnum
Florence Harriet Garton
Emily Elizabeth Guild
Daniel Ashley Jenks
Seth Arthur Loring
Arthur Waldo Lovejoy
Florence Lydia McCoy
Donald Morrison
Carrie Josephine Monroe
Ralph Silas Parks
Lorin Charles Powers
Amalie Cecilia Dorothea Sanders
Sidney Pulsifer Sweetser
Gertrude Locke Symmes
Mabelle Woodbury Taylor
Charles Hosea Temple
George Loring Warner
Grace Inez Wheeler
Arthur Williams
William Mason Wise
Charles Harlow Woodbury
Austin Melvin Works

Bachelors of Philosophy

Wilna Virginia Marshall
Katherine Josephine Swansey

Bachelors of Divinity

Charles Henry Emmons
George Henry Howes
George Hallam Lewis
George Arthur Miller

Bachelors of Science in Civil Engineering

Louis Chevalier
Waldo Edgar Dodge
Walter Warren Ewell
Herman Flagg Ford
Robert Clair Gammon †
Harold Loring Gordon
Charles Ernest Harrington
George Albert Lowe, Jr.
Alfred Boardman Mayhew †
Francis Joseph Seery
George Morris Thompson, Jr.
Howard Rogers Whitney
Harry Percival Wilson
Frank Coy Woodward

† *Extra ordinem* as of the class of 1904

Bachelors of Science in Electrical Engineering

Joseph d'Amaral
William Wendell Bean
Harold Heath Bodge
Alfred Whitman Chase
Francis Alexander Dods
Roy Gay Dow
Edward Leslie Farrar
Herbert Carr Knight
John George Milner
Luther Packard Perry
Blynn Fred Viles

Bachelors of Science in Mechanical Engineering

Compton Durlin Bray
Ernest Dana Crockett

Bachelor of Science in Chemical Engineering

Wendell Lewis Whitehouse

Bachelor of Science in Chemistry

George Leslie Bidwell

Bachelor of Science in Biology

Frederic Franklin Smith

Bachelor of Mechanic Arts

Arthur Adams Folsom (*extra ordinem* as of the class of 1889)

Doctors of Medicine

Wallace Mellen Bickford
Alice Houghton Bigelow *
Stanley Wayne Blanchard
Frederick Leon Bogan
Timothy Francis Brassil
Edward John Brearton
Edison William Brown
Lizzie Maud Carvill
Harriet Freeman Coffin
Edward Joseph Cotter
Ernest Francis Curry
Alton Kallock Curtis
Emile Edward Cyr
William Austin Dutcher
William Joseph Dwyer
Merritt Otis Eddy
Frank Herbert Gile, Jr.
Louis Adolore Oliver Goddu
Harry Weymouth Hammond
Sydney Curtis Hardwick
Robert Brine Harrington
Thomas Frances Henry
Frederick Hinchliffe
Richard Henry Houghton
William Francis Hussey
Arthur Percy Janes
John Michael Kelly
Joseph Thomas Kendricken
Frederick Marshman Kennison
Walter Warren Kingsbury
George Bagnell Landers
Merritt Allen Long
John Gunn MacPhail
Eugene Justin McCarthy
Francis Patrick McCarthy
Michael Francis Edward McMahon
Leon Sam Abrahams Medalia
Anna Frances Murphy
Frederick Paul Murphy
Frederick Vincent Murphy *
James Patrick Augustus Nolan
William Nelson Noyes
Frank Roberts Ober
William Smith O'Brien

* *Cum laude*

Mabel Dyer Ordway *
Clark Kimball Peterson
Anna Ethel Rand *
Horace Kimball Richardson *
Alfred John Roach
Grace Elizabeth Rochford *
Frank Norwood Rogers
Carl Allen Rowe
Edward Allan Rushford
James Joseph Scannell
George Ernest Sherman
Arthur Leslie Simon
Myrtle Smith *
Alberto Horatio Stockbridge
Maude Winnifred Taylor
Harold Fenton Thompson
Oliver Goldsmith Tinkham
Arthur Wallace Tucker *
Forrest Clark Tyson
Emma Juliet Wagner
William Dacre Walker
Joseph Walsh
Lizzie Maude Warren
Allen Augustus Weeden *
Charles Whelan
Albert John Wood
Charles Henry Young
Josefa Zaratt

* *Cum laude*

Doctors of Dental Medicine

Henry Ash
Joseph Michael Blagdon
Frederick Garfield Bodge
Henry Edward Brenan
Bertel Gustaf Carlson
Fred Calvin Caswell
Charles Cummings Cole
George Granville Parker Dickinson
Harry Irving Dowd
John Eugene Dunleavy
George Francis Finnegan
John Francis Gately
Robert Horn
Wilbur True Lunt
Justin Lawrence McCarthy
Frederick William McGourty
Francis Ernest Mallette
Thomas Edward Marr
Charles Samuel Mullin
George Page Nash
Shelley Barnes Osborne
Emile Alfred Roy
Fred Wilbur Tuttle
Henry Anson White
Frank Harrison Gower Whitehouse
Alvin Thomas Wilkinson

Doctors of Dental Medicine (extra ordinem)

John Foster Allen, D.D.S.
George Andrew Bates, D.D.S.
Walter Irving Brigham, D.D.S.
William Martin Flynn, D.D.S.
Frederick Samuel Fogg, D.D.S.
John Wood Forbes, D.D.S.
William Preston Houston, D.D.S.
Ervin Arthur Johnson, D.D.S.
Edgar Osgood Kinsman, D.D.S.
Henry Hildreth Piper, D.D.S.
James Rufus Piper, D.D.S.
William Rice, D.D.S.

Masters of Arts

Ernest Granger Hapgood (Economics)
Thesis: "Modern Apprenticeship Systems in the United States"

Leon Ryder Maxwell (English)
Thesis: "New England Literature as Affected by the Slavery Struggle"

George Edward Pearson (History and Public Law)
Thesis: "An Inquiry into the Reliability of Certain Memoirs Dealing with Napoleon"

Austin Melvin Works (German)
Thesis: "The Romantic Movement in Germany as Expressed in the German Lyric"

Master of Science

Harry Alfred Lane (Engineering)
Thesis: "The Location of the Mt. Dallas and Bedford Branch of the Baltimore and Ohio Railroad"

Doctor of Philosophy

Fred Wilbur Thyng (Biology)
Thesis: "The Squamosal Bone in the Tetrapodous Vertebrata"

Commencement Parts

ERNEST DANA CROCKETT, Cand. B.S.: "Modern Naval Officers"

FLORENCE HARRIET GARTON, Cand. A.B.: "King Minos in Myth and History"

CHARLES CUMMINGS COLE, Cand. D.M.D.: "Dentistry and its Relation to Medicine"

HORACE KIMBALL RICHARDSON, Cand. M.D.: "Tuberculosis, its Nature and Prevention"

ARTHUR WALDO LOVEJOY, Cand. A.B.: "Rudyard Kipling as Exponent of His Age"

GEORGE HENRY HOWES, Cand. B.D.: "The Logic of Character"

ERNEST GRANGER HAPGOOD, Cand. A.M.: "Industrial Education"

Honors

Ella Wallace Bowker (German)
Florence Harriet Garton (Greek)
Frederic Franklin Smith (Biology)
Charles Harlow Woodbury (History and Public Law)

Honorable Mention

Harold Heath Bodge (Electrical Engineering)
Ella Wallace Bowker (Economics)
Compton Durlin Bray (Mechanical Engineering)
Louis Chevalier (Civil Engineering)
Ernest Dana Crockett (Mechanical Engineering)
Carrie Alice Farnum (Greek)
Edward Leslie Farrar (Electrical Engineering)
Emily Elizabeth Guild (English and Latin)

Luther Packard Perry (Electrical Engineering)
Gertrude Locke Symmes (German)
Charles Hosea Temple (History)
Arthur Williams (History and Public Law)
Harry Percival Wilson (Civil Engineering)
Austin Melvin Works (English)

Awards of Prizes, 1904-1905

Entrance Examination Prize

LEROY JAMES COOK

Goddard Prize in Latin

ALICE HAYWARD EDWARDS

Goddard Prize in Mathematics

ETHEL LUELLA FULLER

Scholarship of the Class of 1898

EVA LILLIAN CHANDLER

Winners of Prizes in the Annual Debate

THE KNOWLTON DEBATING CLUB

Best Individual Debater

ERNEST GEORGE METCALFE

Rhetorical Prizes

First Division

ETHEL LUELLA FULLER (1) HENRY ERIC JEWETT (2)

Second Division

HENRY BLAKE HANSCOM (1) HAROLD CLIFFORD HASKELL (2)

Third Division

ERNEST GEORGE METCALFE (1) GEORGE STEWART MILLER (2)

Greenwood Prizes in Oratory in the Divinity School

GEORGE ARTHUR MILLER HENRY ADAMS PARKHURST
FRED ATKINS MOORE

REGISTER OF STUDENTS

Graduate Department

Resident Students

BATES, GEORGE ANDREW — *Auburndale* — *305 Central St.*
D.D.S. (B.D. Col.), 1889, M.S., 1904, D.M.D., 1905 First Year Biology

MOORE, FRED ATKINS — *Somerville* — *10 Grant St.*
A.B., 1904 First Year English and Philosophy

MURPHY, JR., ARTHUR — *Wollaston* — Curtis, 7
A.B., 1903, A.M., 1904 First Year Chemistry

PEARSON, GEORGE EDWARD — *W. Somerville* — *325 Highland Ave.*
A.B., 1904, A.M., 1905 First Year History and Public Law

SMITH, HOWARD DEXTER — *N. Scituate, R. I.* — East, 10
First Year Chemistry

TROUT, DELMAR EVERETT — *Springfield, O.* — Paige, 7
A.B., 1904 First Year Economics

VINING, EUGENE CONRAD — *Billerica*
Second Year Latin

Courses in Arts and Sciences

[In the following list the course pursued by each student is indicated by the Italic letters immediately following the name. The signs used are as follows: courses leading to the degree of A.B., *ab*; to the degree of Ph.B., *ph*; to the degree of S.B.,—in Civil Engineering, *ce*; in Electrical Engineering, *ee*; in Mechanical Engineering, *me*; in Chemical Engineering, *ch e*; and in the first year of the Engineering Courses, before the differentiation of studies, *e*: to the degree of S.B., through the Science Courses,—in General Science, *sc*; in Biology, *bi*; in Chemistry, *ch*; and the Medical Preparatory, *mp*.

The third column records the home address. The fourth column gives the address at Tufts College, unless the street is printed in Italics, in which latter case it is a part of the home address.]

Senior Class

Ames, Harvey Libby	*me*	*Somerville*	*120 Perkins St.*
Backus, John Alexander	*me*	*Somerville*	*67 Curtis St.*
Boardman, Seth Howard	*ce*	*Georgetown*	A T Ω House
Buckley, James Robert	*ab*	*Tufts College*	West, 14
Chandler, Eva Lillian	*ab*	*Brattlebora, Vt.*	Metcalf, 3
Chapin, Charles Matthews	*ab*	*Rockland, Me.*	West, 26
Cheney, Genevieve Henrietta	*ab*	*Delevan, N. Y.*	Metcalf, 8
Clement, Fannie May	*ab*	*Everett*	*4 Dean St.*
Coupal, James Francis	*mp*	*Everett*	*35 Wellington Ave.*
Cousins, Clarence Edwin	*ab*	*Salem*	West, 7
Crowell, Freeman Shedd	*ee*	*Lowell*	West, 21
Currier, Rudolph Winfield	*ab*	*Swampscott*	East, 13
Cutler, Leon George	*ce*	*N. Montpelier, Vt.*	West, 20
Dix, Leon Edward	*ce*	*Hartford, Conn.*	A T Ω House
Dole, Henry Haile	*ee*	*Arlington*	Θ Δ X House
Douglas, Jerome Harvey	*ab*	*Hull*	West, 22
Dustin, Maurice Nathaniel	*ce*	*Dexter, Me.*	Δ T House
Edwards, Alice Hayward	*ab*	*Tufts College*	Start House
Ellis, Robert Cram	*ce*	*Detroit, Mich.*	Z Ψ House
Farnsworth, Dana Tufts	*ab*	*Taunton*	Z Ψ House
Fisher, William Ernest	*ee*	*W. Somerville*	*26 Hancock St.*
Fogg, Ralph Justin	*ce*	*Lynn*	East, 13
Graves, Otho McCarroll	*ce*	*North Adams*	Θ Δ X House
Gudge, Benjamin Joseph	*ee*	*White City, Kan.*	Dean, 2
Hadley, Norris Edmund	*ce*	*W. Somerville*	*35 Conwell Ave.*
Hall, Alfred Vargrave	*ab*	*Peru, Me.*	Δ T House
Hanscom, Henry Blake	*ab*	*Leeds Junction, Vt.*	Δ T House
Haskell, Harold Clifford	*ab*	*Rockland, Me.*	West, 20

Hayes, Chester Adams, Jr.	*ce*	*N. Berwick, Me.*	Α Τ Ω House
Hayes, Will Francis	*mp*	*Georgetown*	Α Τ Ω House
Hickey, Edwin Ernest	*me*	*Tufts College*	West, 16
Inglis, Henry Baxter	*ee*	*Grosse Isle, Mich.*	Ζ Ψ House
Jackson, Minnie Wallis	*ab*	*Medford*	*47 Fulton St.*
Johnson, Phebe Chandler	*ab*	*Spencer*	Metcalf, 13
Jones, John Paul	*ee*	*Woburn*	*662 Main St.*
Judkins, Agnes Frances	*ab*	*Merrimac*	Metcalf, 16
Knowlton, Edward Allen	*mp*	*West Newton*	Θ Δ Χ House
Lamb, Norval Edmund	*me*	*Attleboro*	Dean, 6
Lendall, Harry Nelson	*ce*	*Lynn*	West, 21
Mackenzie, Fred Ross	*ab*	*Cliftondale*	West, 4
Mann, Bertha Hill	*ab*	*Norway, Me.*	Start, 6
Merrill, Carle Jewett	*me*	*Somerville*	*339 Summer St.*
Metcalfe, Ernest George	*ab*	*Brooklyn, N. Y.*	Ζ Ψ House
Michael, Herbert Ledlie	*ab*	*Kingston, N. Y.*	Θ Δ Χ House
Miller, George Stewart	*ab*	*No. Andover*	West, 7
Nash, Curtis Whithed	*ab*	*Winchester*	Ζ Ψ House
Noyes, Marion Temple	*ab*	*W. Somerville*	*22 Dover St.*
Nye, Laila Campbell	*ab*	*W. Somerville*	*33 Electric Ave.*
Page, Arthur Smith	*ee*	*Everett*	*36 Dean St.*
Paine, Alice Peabody	*ab*	*Groveland*	*358 Main St.*
Phillips, Leslie Blaine	*ee*	*Somerville*	Δ Τ House
Priest, Alice Eaton	*ab*	*Canton, N. Y.*	Start, 1
Proctor, Fred Willis	*ce*	*Wilton, N. H.*	Δ Τ Δ House
Ringdahl, Frederick Wilhelm	*ab*	*Portland, Me.*	West, 16
Saunders, Louise Melbourne	*ab*	*Somerville, 24 Powder House Terrace*	
Shearer, Gordon Grant	*ee*	*Somerville*	*44 Morrison Ave.*
Sibley, Ruth Annie	*ab*	*Brookline*	Metcalf, 12
Smead, Alfred Felton	*me*	*Greenfield*	Δ Τ Δ House
Smith, Richard Curtis	*ce*	*Medford*	Δ Τ House
Steele, Martha Taylor	*ab*	*Stoughton*	Metcalf, C
Stone, Charles Henry, Jr.	*sc*	*Waterbury Centre, Vt.* 62 Quincy St., Medford Hillside	
Taylor, Chester Emerson	*ce*	*Clinton*	Dean, 11
Tenny, Miriam	*ab*	*Auburn, Me.*	Metcalf, A
Tewksbury, Ella May	*ab*	*Lexington*	Metcalf, C
Vickery, Reina Gladys	*ab*	*Medford Hillside*	*16 Edison Ave.*
Wellman, Hugh Horace	*ce*	*Westminster West, Vt.*	Α Τ Ω House

Junior Class

Alvarenga, Francisco Bento de	*ce*	*Sao Paulo, Brazil*	West, 12
Backus, Florence Erie	*ab*	*W. Somerville*	*67 Curtis St.*
Bacon, Theodore Sheldrake	*ee*	*Waltham*	*22 School St.*

Bean, Charles Franklin Kingsbury	*ab*	*W. Medford*	Δ Υ House
Benoit, Armand William	*ce*	*Lawrence*	East, 24
Bertwell, Margaret May	*ab*	*W. Somerville*	*48 Cameron Ave.*
Blake, William Edwin	*ab*	*Westfield*	East, 4
Clarke, Bertrand Moody	*ab*	*Waltham*	Δ Υ House
Cliff, Joseph Arthur	*ee*	*Dorchester Centre*	*67 Edson St.*
Coggan, Linus Child	*ab*	*Winchester*	Dean, 8
Colbert, Leo Otis	*ce*	*Charlestown*	*34 Union St.*
Crawford, Irena May	*ab*	*North Dana*	Metcalf, 11
Cummings, George Smith	*ee*	*Lynn*	East, 30
Curtiss, Prudence	*ab*	*Hingham Centre*	Start, 4
Derry, Harold Woodard	*ee*	*N. Attleboro*	Δ Υ House
Dillingham, Alexander	*ab*	*Bridgeport, Conn.*	West, 27
Doherty, Mary Louise	*ab*	*Woburn*	*15 Monroe St.*
Dolloff, Annie Louise	*ab*	*New Sharon, Me.*	Start, 5
Douglas, Maude Geraldine	*ab*	*Hull*	Metcalf, 9
Duffey, Cornelius Francis	*ee*	*Weymouth*	116 Charles St., Boston
Dwelley, Charles Theodore	*ee*	*Arlington Heights*	*146 Park Ave.*
Flint, Lester Sylvanus	*me*	*Everett*	West, 9
Folsom, Josie Burbank	*ab*	*Medford*	*35 College Ave.*
Ganteaume, Henri Dicudonné Alphonse	*ce*	*Trinidad, B.W.I.*	West, 12
Hahn, Frances Anna	*ab*	*Everett*	*12 Bennett St.*
Hannah, Persis Dwight	*ab*	*Medford*	*53 Oakland St.*
Hatch, Fred Eugene	*ee*	*Medford*	*71 Adams St.*
Holden, Joseph William	*ce*	*Meriden, Conn.*	East, 19
Jeffers, Robert Buck	*ce*	*Chelsea*	West, 5
Killpartrick, Clarence Thomas	*ce*	*Lowell*	West, 19
Knowles, Charles H	*ce*	*Cambridge*	*16 Carver St.*
Lakin, Roger	*ab*	*S. Braintree*	Dean, 3
Lewis, Frederick William	*ce*	*Bethlehem, N. H.*	Δ Υ House
Mergendahl, Titus Eugene	*ce*	*Kingston, N. Y.*	Δ Τ Δ House
Moore, Percy Roberts	*ab*	*Montgomery*	East, 3
Mulvey, Ernest Chaffey	*ab*	*Worcester*	Δ Υ House
Neville, Gertrude Alena	*ab*	*Woburn*	*22 Kilby St.*
Norwood, Edgar Alva	*ee*	*Rockport*	West, 9
Ober, Ernest Chester	*ee*	*Northeast Harbor, Me.*	West, 1
Orne, Marion Frances	*ab*	*W. Somerville*	*43 Fairmount Ave.*
Packard, Merton Foster	*ee*	*Marion*	East, 15
Payrow, Harry Gordon	*ce*	*Lynn*	*17 Chase St.*
Peterson, John Ferdinand	*ce*	*Lynn*	West, 8
Porter, Bella Celia	*ab*	*Stoughton*	Metcalf, 3
Rich, Marion	*ab*	*Chelsea*	*17 Lawrence St.*
Sanborn, John Freeman	*ee*	*Newfields, N. H.*	West, 1

Savage, Howard James	*ab*	*Meriden, Conn.*	Θ Δ X House
Smith, Hugh Wallace	*ab*	*Everett*	Paige, 23
Starrett, Arthur Rawson	*ce*	*N. Andover*	East, 12
Sturtevant, Ethel Powys	*ab*	*Somerville*	*78 Columbus Ave.*
Svensen, Carl Lars	*ce*	*Medford*	*101 Winthrop St.*
Tay, Samuel Wright	*ce*	*Medford*	*288 Forest St.*
Thorpe, Winnifred Rosamond	*ab*	*Highlandville*	Metcalf, 4
Turner, Harlan Barzillai	*ab*	*Portland, Me.*	West, 24
Tyrrell, James Francis	*ab*	*Charlestown*	*83 Medford St.*
Ungar, Frida Emilie	*ab*	*W. Medford*	*520 High St.*
Warner, Willis Chauncey	*ee*	*Cromwell, Conn.*	East, 15
Wilson, Edgar Perkins	*ch e*	*New Rochelle, N. Y.*	Z Ψ House
Wyckoff, Joseph Ray	*ab*	*Franklin*	West, 5

Sophomore Class

Adams, Katharine	*ab*	*Hartford, Conn.*	Metcalf, 6
Alpaugh, Walter George	*sc*	*Willimantic, Conn.*	West, 27
Armstrong, Marjorie Wright	*ab*	*Somerville*	*112 Sycamore St.*
Averill, Harvey Eastman	*ab*	*Barre, Vt.*	Curtis, 12
Bartlett, Gertrude Elisabeth	*sc*	*Kingston, N. H.*	Start, 3
Bond, Amy Gardner	*ab*	*N. Woburn*	*19 Traverse St.*
Boswell, Beth	*ab*	*Newton, N. H.*	Metcalf, 10
Boyd, Gilbert Dixon	*me*	*Worcester*	Δ T House
Brooks, Leroy Rollins	*ee*	*Medford*	*58 Medford St.*
Buchanan, Perley J	*ce*	*Barre, Vt,*	West, 26
Burkhardt, Max	*ee*	*Roxbury*	*14 Highland Ave.*
Burnham, George Augustus	*ee*	*S. Essex*	Curtis, 11
Carleton, Miriam Stanley	*ab*	*Lynn*	Start, 3
Case, Ralph Edward	*ce*	*Albany, N. Y.*	West, 28
Clare, Charles Henry	*ee*	*Quincy*	West, 2
Clough, Ray William	*ch*	*East Braintree, Vt.*	East, 1
Cohen, Octavus Phillip	*me*	*Northport, L.I.*	Δ T House
Currier, Aimée Edna	*ab*	*Everett*	*29 Hosmer St.*
Dailey, Marion Eleanor	*ab*	*Wakefield*	Start, 2
Danforth, Charles Haskell	*ab*	*Norway, Me.*	2 Ossipee Road, West Somerville
Danforth, Earl Henry	*ab*	*East Norton*	East, 29
Davis, Alfred Sherman	*ee*	*Norwich, Conn.*	Curtis, 11
Dickinson, Frank Leroy	*ab*	*Woodstock, N. B.*	West, 4
Doherty, James Thomas	*ee*	*S. Boston*	*341 K St.*
Dolbear, Mary Elizabeth	*bi*	*Tufts College*	*134 Professors Row*
Esteves, William	*ce*	*Aguadilla, Porto Rico*	32 Dearborn Road, Tufts College, Mass.

Farnsworth, Ray Dwinell	*ce*	*Taunton*	West, 10
Fickett, Elmer Edward	*ce*	*Chelsea*	*18 Carmel St.*
Fraser, Carolyn Genesta	*ab*	*Somerville*	*16 Porter St.*
Fuller, Ethel Luella	*ab*	*Everett*	*63 Cottage St.*
Goggin, Walter John	*ab*	*Gardner*	Dean, 11
Green, Walter Robbins	*ee*	*Wilbraham*	West, 32
Greenwood, Alveda Frances	*hi*	*Somerville*	*Bow St. Place*
Hammett, Frederick Simmonds	*ab*	*W. Somerville*	*25 Windsor Road*
Herbert, Wilwyn	*ce*	*Boston*	West, 28
Hewitt, Frank Waldo	*ee*	*Cambridge*	*81 Pemberton St.*
Holt, Klate M	*ee*	*S. Woodstock, Vt.*	West, 3
Horr, Howard Atkinson	*ce*	*W. Somerville*	*33 Claremon St.*
Howes, Herbert Ellsworth	*ce*	*Ashfield*	Curtis, 6
Humphries, Ernest Rogers	*ab*	*Malden*	*20 Porter St.*
Hunter, Lester Bradford	*e*	*Dorchester*	West, 25
Jackson, John Perkins, Jr.	*ab*	*Medford*	*47 Fulton St.*
Johnson, Dora Lucille	*ab*	*Uxbridge*	Metcalf, 11
Johnston, Robert Smith	*ce*	*New York, N. Y.*	Dean, 12
Jouett, Blanche Isabelle	*ab*	*W. Medford*	*44 Boston Ave.*
Knowlton, Frank Weston	*me*	*Chelsea*	West, 24
Ladd, Esther Evelyn	*ab*	*Malden*	*68 Brackenbury St.*
Lane, Clifford Warren	*ch e*	*Foxboro*	Curtis, 8
Leighton, Gracelyn Florence	*ab*	*Pittsfield, N. H.*	Start, 7
Marshall, Marguerite Mooers	*ab*	*Kingston, N. H.*	Metcalf, 10
Mason, Howard Crandall	*ab*	*Windsor, Conn.*	East, 14
Masseck, Clinton Joseph	*ab*	*W. Somerville*	*2 Ossipee Road*
Merchant, Ernest Howard	*ch e*	*Gloucester*	East, 25
Michael, William Whipple	*ce*	*Kingston, N. Y.*	West, 23
Mitchell, Ernest Hervey Lewis	*me*	*Bath, Me.*	West, 13
Mooney, Frederic Allen	*ab*	*Worcester*	Paige, 31 and 32
Moore, Stanley Wallace	*ce*	*Brooklyn, N. Y.*	West, 11
Murray, Francis Joseph	*ab*	*Maynard*	Dean, 11
Nason, Percy Durell	*ce*	*Bethlehem, N. H.*	Δ Υ House
Newhall, Arthur Brock	*ce*	*Lynn*	West, 8
Odell, Raymond Hale	*ab*	*Salem*	*13 Briggs St.*
Page, Mabel Elizabeth	*ab*	*Somerville*	*4 Thurston St.*
Perkins, Edith Blanche	*ab*	*Medford*	*16 Ellis Ave.*
Phelan, John Joseph	*ch e*	*Lowell*	West, 19
Piper, Fred Farwell	*ee*	*Roxbury*	*7 Mt. Pleasant Pl.*
Powers, Cedric	*me*	*Allston*	West, 13
Remele, Ethel Mason	*ab*	*W. Medford*	*56 Irving St.*
Richards, Amy Viola	*ab*	*Lynn*	Metcalf, 15
Rogers, Mason Albright	*ee*	*Albion, N. Y.*	Curtis, 6
Rowe, Everett Whittemore	*ch*	*Gloucester*	East, 25

Seede, Charles Edward	*e*	*Lowell*	East, 8
Sherburne, Levit Clough	*ab*	*Portlenk, Me.*	Paige, 36
Short, John Edward	*ce*	*Shelburne Falls*	Curtis, 2
Smith, Francis Warton Kaan	*e*	*Somerville*	West, 14
Stafford, Earl	*me*	*Rockport*	Curtis, 5
Starratt, John Phineas	*ee*	*Nashua, N. H.*	West, 32
Stevens, Damon Bryant	*ee*	*W. Somerville*	*45 Kidder Ave.*
Studley, Joseph Harris	*ee*	*N. Hanover*	Curtis, 10
Sylvester, Allan Thorndyke	*ce*	*N. Attleboro*	East, 9
Todd, Arthur Oswald	*ee*	*Trinidad, B. W. I.*	West, 2
Upham, Charles Melville	*e*	*Stoughton*	Curtis, 5
Vogt, Dayton George	*ab*	*Buffalo, N. Y.*	Paige, 25
Ward, Arthur Henry	*ce*	*Brooklyn, N. Y.*	West, 11
Weeks, Hubert Gordon	*me*	*Wellington*	*32 Fourth St.*
Wells, Gladys	*ab*	*Troy, N. Y.*	Metcalf, B
West, Geneva	*ab*	*Dorchester Centre*	Start, 7
White, Everett Sargent	*ab*	*Taunton*	East, 29
Wilbur, Ralph Sydney	*me*	*Dorchester*	East, 1
Wilson, Harold David	*ab*	*Tufts College*	East, 2
Wilson, Rodney Melledge	*ee*	*New Rochelle, N. Y.*	Dean, 8
Winn, Amy Josephine	*ab*	*Arlington*	Metcalf, 6
Woodward, Herbert Watson	*ce*	*Somerville*	
		171 Powder House Boulevard	
Zeller, Joseph	*e*	*West Newton*	West, 30

Freshman Class

Aiken, Ethel Mary	*ab*	*Everett*	*96 Clark St.*
Armstrong, George West	*ab*	*Boston*	Dean, 10
Arthur, Malcolm Underwood	*e*	*Springfield*	West, 29
Bailey, Harold Leslie	*ab*	*Byfield*	East, 14
Bailey, Harold Percy	*ab*	*Shelburne Falls*	Curtis, 2
Bliss, Raymond Whitcomb	*e*	*Chelsea*	East, 26
Blodgett, Guy Cleveland	*ab*	*Milford, N. H.*	
		399 Massachusetts Ave., Boston	
Blythe, Alexander Watt	*e*	*W. Somerville*	*400 Highland Ave.*
Bogue, Mary Florentia	*ab*	*Medford*	*315 Riverside Ave.*
Bolton, Forrest Herbert	*e*	*Northfield*	West, 18
Boss, John Grace	*ab*	*Willimantic, Conn.*	West, 22
Brackett, Arthur Edwin	*e*	*Dorchester*	*19 King St.*
Bryer, Giles Sherman	*e*	*Wakefield*	*7 Nichols St.*
Buck, Alfred Laflin	*ab*	*Stoneham*	*45 Pomeworth St.*
Burnham, James A., Jr.	*ab*	*Ballston Spa, N. Y.*	Dean, 12
Bush, Reba May	*ab*	*Chelsea*	Metcalf, 11
Bushway, Walter Benjamin	*e*	*Cambridge*	*323 Broadway*

Butman, Adelaide Louise	*ab*	*Round Pond, Me.*	2 E. Capen St.
Butters, Ruth Gertrude	*ab*	*Somerville*	*78 Summer St.*
Callahan, John Frances	*ce*	*Charlestown*	*15 Walker St.*
Carpenter, Roy Elbert	*e*	*Medford*	*10 Sumner Ave.*
Cassidy, Franklin Chester	*sc*	*Medford*	*19 Washington St.*
Cate, Emily Morgan	*ab*	*Waltham*	*205 Lowell St.*
Chapin, Harry Garfield	*ab*	*N. Andover*	East, 11
Chaplin, Henry Prescott	*e*	*Georgetown*	
Chase, Edgar Sawyer	*ab*	*W. Newbury*	2 Curtis Ave.
Clark, Frank Joshua	*e*	*Dorchester*	East, 4
Clough, Emma Rosalie	*sc*	*Medford Hillside*	2 E. Capen St.
Coday, Harrison Sumner	*ab*	*W. Medford*	*10 Vernon St.*
Coe, Kersey Fell	*e*	*Medford*	*43 Ashland St.*
Cole, Ethel May	*ab*	*W. Somerville*	*29 Raymond Ave.*
Collins, John Fred	*e*	*Lynn*	*2 Dowling Terrace*
Connolly, John Owen	*e*	*Woburn*	*13 1-2 Hovey St.*
Cook, Leroy James	*ab*	*Winthrop*	East, 26
Corbett, Matthew, Jr.	*ch*	*S. Norwalk, Conn.*	East, 22
Cousins, Howard Everett	*e*	*Salem*	East, 24
Darling, Sumner Eastman	*ab*	*Hardwick, Vt.*	Dean, 9
Dewey, Harold William	*ab*	*Montpelier, Vt.*	Dean, 1
Doane, Lewis	*ab*	*Marblehead*	Dean, 7
Dowling, William Francis	*e*	*Everett*	Dean, 5
Ducharme, Francis Leonard	*e*	*Boston*	*25 Dalton St.*
Dwyer, John Edmund	*ab*	*Somerville*	*15 Burnside Ave.*
Ellis, Lester Fisher	*e*	*Somerville*	*36 Adams St.*
Endicott, Lois Frances	*ab*	*Chelsea*	Metcalf, 2
Etz, Roger Frederick	*ab*	*Cleveland, Ohio*	Paige, 27 & 28
FitzGerald, Edward Francis	*e*	*Somerville*	*21 Dane St.*
Ford, Walter Augustus	*e*	*Cambridge*	*186 Windsor St.*
Francis, Roy William Thompson	*e*	*Everett*	*5 Neilson Ave.*
Fray, Florence Emily	*ab*	*Bridgeport, Conn.*	Metcalf, 5
Getchell, Charles Howard	*ce*	*Somerville*	*36 Banks St.*
Godbold, Warren Arthur	*e*	*E. Boston*	*22 Monmouth St.*
Gordon, Frank Vincent	*e*	*Everett*	*13 Paris St.*
Gould, Ralph Edgar	*e*	*Roxbury*	*55 Beech Glen St.*
Grant, Ulysses Simpson	*mp*	*Everett*	16 Hillside Ave.
Graves, Gladys Alpha	*ab*	*Worcester*	38 Marshall St., Medford Hillside
Haley, Paul James Dodge	*e*	*Medford*	*83 Otis St.*
Hall, Ernest LeRoy	*e*	*W. Somerville*	*Dow St.*
Hemman, Laurence Merrill	*e*	*Roslindale*	*159 Orange St.*
Holland, Gertrude Frothingham	*ab*	*Somerville*	*198 Central St.*
Homer, Dora	*ab*	*Medford*	*169 Forest St.*

Hooper, William Ellsworth	*e*	*Tufts College*	*124 Professors Row*
Hubbard, Carl Perry	*e*	*Woburn*	*26 Vernon St.*
Ireland, Samuel Foster	*e*	*W. Chatham*	East, 7
Johansson, Carl Wilhelm Emanuel André	*e*	*Dorchester*	*13 Wendover St.*
Johnson, Charles Augustus	*e*	*Waltham*	*31 Orange St.*
Jones, Carleton Parker	*ch*	*Somerville*	*157 Willow Ave.*
Kent, Arthur Briggs	*ch*	*Danvers*	17 Centre St.
King, Louis Bradford	*ab*	*Taunton*	East, 27
Lamb, Leonard Illman	*e*	*Attleboro*	East, 34
Leavitt, George Albert	*ce*	*W. Medford*	West, 29
Linton, William Hebrew	*e*	*Hartford, Conn.*	West, 18
Loud, Ned Conrad	*ab*	*Tufts College*	*Paige, 14*
Lovell, Roy Franklin	*e*	*Washington, D. C.*	46 Pearl St., Medford
Lowell Arthur Currier	*ce*	*Farmington, Me.*	East, 9
Lunt, Maud Myrtle	*ab*	*W. Somerville*	*50 Curtis St.*
Macdonald, Roland Jackson	*e*	*Charlestown*	*17 Monument Ave.*
MacNeill, Archie Wilman	*ab*	*Roxbury*	*14 Eldora St.*
Maxwell, Clayton Edwin	*e*	*Palmer*	East, 33
McCarthy, Thomas Joseph	*e*	*W. Somerville*	*51 Liberty Ave.*
McCoy, Annie Rebecca	*ab*	*Somerville*	*62 Main St.*
McDonald, Ray Thomas	*ab*	*Somerville*	*56 Cedar St.*
McFarland, Beatrice Mary	*ab*	*W. Somerville*	*21 Cedar St.*
McGann, Charles Raymond	*e*	*Woburn*	*12 Main St.*
McNayr, George Everett	*e*	*N. Hanover*	Curtis, 9
Miller, Helen Marie	*ab*	*Malden*	47 Cedar St.
Mooar, Percy Andrew	*e*	*Methuen*	West, 15
Moore, Ernest Raymond	*e*	*W. Somerville*	*59 Wallace St.*
Morey, Edwin, 2nd	*e*	*Arlington*	East, 34
Morse, Mayo Ellsworth	*ce*	*Everett*	Curtis, 3
Mulcahy, William Edward	*e*	*Holyoke*	East, 21
Nash, Beth Hazel	*ab*	*Somerville*	*220 School St.*
Nason, Walter Hooker	*e*	*N. Billerica*	East, 5
Nickerson, Ralph Brown	*ch e*	*Everett*	
Noyes, Joseph Edward	*e*	*Georgetown*	East, 28
Oram, Julius Calvin	*e*	*Bristol, Me.*	East, 6
Pacheco, Edmundo Corrêa	*e*	*Sao Paulo, Brazil*	Bellevue St., Medford Hillside
Patten, Cara Eliza	*ab*	*Somerville*	*26 Albion St.*
Perkins, Isabel Clara	*ab*	*Worcester*	Metcalf, 15
Pierce, Gardner Miles	*e*	*Woburn*	*183 Lexington St.*
Puffer, Charles George	*e*	*Salem*	West, 25
Read, Ernest Dunning	*e*	*Richford, Vt.*	East, 11
Renison, William James	*ab*	*S. Boston*	*90 P St.*

Rich, Alice Matilda	*ab*	*Chelsea*	*17 Lawrence St.*
Ringer, Wilfred Harvey	*ee*	*Charlestown*	*16 A Eden St.*
Robinson, Charles Andrew	*e*	*Somerville*	*44 Lexington Ave.*
Rochford, Hilary Leonard	*e*	*Newton Lower Falls*	West, 30
Root, Albert Barnard, Jr.	*e*	*Jamaica Plain*	Dean, 4
Roper, Henry Joseph	*ab*	*N. Cambridge*	*39 Hubbard Ave.*
Roys, Edvelle Adollus	*ab*	*Waterbury Ctr., Vt.*	Paige, 13 & 14
Rush, James Edwin	*e*	*S. Boston*	*120 Dorchester St.*
Ruth, Conant Wentworth	*ee*	*Houlton, Me.*	West, 23
Sears, Winthrop	*e*	*Somerville*	*25 Dartmouth St.*
Shaw, Charles Alfred, Jr.	*ee*	*Fall River*	East, 2
Sheehy, Vincent	*e*	*E. Weymouth*	East, 32
Sheridan, Philip Edward Anthony	*ab*	*S. Boston*	*697 Sixth St.*
Small, Ernest Bliss	*ce*	*Somerville*	*75 Prospect St.*
Stevens, Walter Leonard, Jr.	*e*	*W. Somerville*	*5 Kenwood St.*
Stone, Ralph William	*e*	*Reading*	*34 West St.*
Swartz, Leslie	*e*	*Wellesley*	West, 13
Sweeney, Augusta Reddington	*ab*	*Quincy*	*72 Phipps St.*
Thayer, Dora Hudson	*ab*	*Chelsea*	*28 Tudor St.*
Thomas, Alma Arlene	*ab*	*Medford*	*122 Summer St.*
Tupper, Margaret Christy	*ab*	*Lexington*	Metcalf, 1
Turner, Homer Root	*e*	*Willimantic, Conn.*	West, 31
Vose, Henry Lorenzo	*e*	*Roxbury*	Dean, 4
Washington, Forrester Blanchard	*e*	*S. Boston*	*390 East Eighth St.*
Wellman, Abby Ellen	*ab*	*Westminster West, Vt.*	2 E. Capen St., Medford Hillside
Whippen, Henry Cass	*ab*	*Kingston, N. H.*	East, 33
Whitney, Frederic Percy	*e*	*Somerville*	*107 Sycamore St.*
Wood, Robert L	*e*	*Northfield*	West, 3
Young, Leon Joseph	*e*	*Dorchester*	*3 Puritan Ave.*

Babbitt, Eugene Leslie	*sc*	*Somerville*	*207 Highland Ave.*
Cronin, Frederick Arthur	*sc*	*Roxbury*	*285 Dudley St.*
Goddard, Roscoe Hudson	*ch*	*Everett*	Δ T Δ House
Hartley, Mary Eunice	*ab*	*Bridgeport, Conn.*	Metcalf, 15
Haven, Genevieve Marie	*ab*	*Somerville*	*69 Curtis St.*
Kawasaki, Shoje	*ab*	*Kobe, Japan*	Dean, 5
Roberts, Henry W	*ab*	*Pigeon Cove*	West, 31
Sheehan, Harry William	*ab*	*Saugus*	*21 Pleasant St.*

Special Students

Bennett, Charles Randolph II. *Economics*	*Saugus*	Δ T Δ House
Briggs, John, Jr. I. *Medical Preparatory*	*Newton Centre*	East, 28

Bucknam, Alice I. *English*	*Eastport, Me.*	Metcalf, 7
Druley, Harriet Evans I. *Language*	*Belpre, O.*	159 Foster St., Brighton
Fischer, Theodore Adolph I. *English*	*Medford*	*34 Emery St.*
Fraser, Beatrice Maude III. *English*	*Somerville*	*16 Porter St.*
Hamilton, Leon Humphrey I. *Medical Preparatory*	*Millers Falls, Me.*	Curtis, 8
Howard, Herbert Handy I. *Medical Preparatory*	*Somerville*	*10 Mystic St.*
Inaba, Arthur Seibaro I. *Language*	*Kyoba, Japan*	West, 10
Johnson, Gertrude Christine I. *Medical Preparatory*	*S. Manchester, Conn.*	Metcalf, 15
Joskie, Sadie III. *Economics*	*Roxbury*	*436 Dudley St.*
Kimball, Nellie Lodema I. *Music and Language*	*Somerville*	*58 Main St.*
Ladd, Eleanore II. *English*	*Medford*	*66 High St.*
Loring, Daisy Alice I. *Music*	*Portland, Me.*	Start, 4
McConnell, David James, Jr. I. *Medical Preparatory*	*Groveton, N. H.*	East, 31
Martin, Oscar I. *Medical Preparatory*	*Winchester*	*2 Dix St.*
Pattee, Herbert Scott I. *Medical Preparatory*	*Manchester, N. H.*	West, 14
Rockwell, Lena Hortense I. *German*	*W. Somerville* *133 Powder House Boulevard*	
Spence, Albert Hague, Jr. I. *Philosophy*	*Peaks Island, Me.* 43 Teele Ave., West Somerville	
Stearns, Albert Warren I. *Medical Preparatory*	*Billerica*	East, 5
Warner, Edward Marten II. *English*	*Boston*	*562 Newbury St.*
Young, Veta Lake Iredale I. *Language*	*Somerville*	*139 Sycamore St.*

Supplementary List

[Students present during 1904–05, but not appearing in the catalogue]

Bennett, Charles Randolph	*sp*	*Saugus*	Δ T Δ House
Burnham, James A.	*ab*	*Ballston Spa, N. Y.*	Dean, 12
Given, William Barns	*e*	*Columbia, Pa.* 261 Newbury St., Boston	
McCann, Charles David	*ab*	*Brockton*	
Warner, Edward Martin	*sp*	*Boston*	*562 Newbury St.*

Divinity School

Fourth Year

Gay, George Augustus	*Meriden, Conn.*	Paige, 19
Parkhurst, Henry Adams	*Dunstable*	Paige, 30
Willis, Sidney Joel	*Concord, Vt.*	Paige, 21

Third Year

Gale, Howard Charles	*Haverhill*	Paige, 24
Weakley, James Richard	*Philadelphia, Pa.*	Paige, 4

FIVE YEAR A.B.–B.D. COURSE

Fifth Year

Hersey, Harry Adams, A.B.	*Dorchester*	Paige, 12
Moore, Fred Atkins, A.B.	*Somerville*	Paige, 6
Temple, Charles Hosea, A.B.	*Hinsdale, N.H.*	Paige, 1 and 2

Fourth Year

Trout, Delmar Everett, A.B.	*Springfield, O.*	Paige, 7

Second Year

Sherburne, Levitt Clough	*Portland, Me.*	Paige, 36
Vogt, Dayton George	*Buffalo, N. Y.*	Paige, 25

First Year

Etz, Roger Frederick	*Cleveland, O.*	Paige, 27 and 28
Loud, Ned Conrad	*Tufts College*	Paige, 14
Mooney, Frederic Allen	*Worcester*	Paige, 31 and 32
Roys, Edvelle Adollus	*Waterbury Centre, Vt.*	Paige, 13 and 14

Bromfield-Pearson School

Binns, Frank	*Methuen*	West, 15
Brehm, Edward Philip	*Hartford, Conn.*	West, 23
Bridges, Roy Dana	*Massena, N. Y.*	East, 16
Brigham, William Burpee	*Sterling*	43 Marion St., Medford
Chase, Leo Waldemar	*Lowell*	10 Fairmount St., Medford
Dowell, Herbert Frazer	*Medford*	*43 Marion St.*
Guptill, Mark Hoyt	*Everett*	*48 Dean St.*
Hall, William Miller	*Middletown, Conn.*	East, 17
Knowlton, David Bradford	*Galveston, Texas*	Curtis, 10
Macdonald, John Harrison, Jr.	*Everett*	*80 Baldwin Ave.*
McCann, Cornelius Joseph	*S. Portland, Me.*	
Montague, George Alfred	*Boston*	*17 Fayette St.*
Morris, Robert	*N. Cambridge*	*62 Mt. Pleasant St.*
Purinton, Jacob Wilbur	*Dover, N. H.*	East, 18
Sawyer, Clyde Augustus	*Everett*	*36 Baker Rd.*
Sides, Arthur Wallace	*N. Hanover*	Curtis, 9
Smith, Herbert Edward	*Stoneham*	*26 Chestnut St.*
Staveley, John	*Roxbury*	*47 W. Cottage St.*
West, Edward Augustus	*Niagara Falls, N. Y.*	
		Beacon Chambers, Boston

Medical School

[P. O. Address, 416 Huntington Ave., Boston, Mass.]

Fourth Year

Bagnall, Arthur Wallace . . . . . *Roslindale*
Baker, Myron Clarke . . . . . *Knoxville, Tenn.*
Barstow, Andrew Thaddeus . . . . . *E. Braintree*
Bates, Lewis Beals . . . . . *N. Weymouth*
Besse, Frank Adelbert, D.M.D. . . . . *Orleans*
Breen, James Henry . . . . . *Hudson*
Brown, Louis Raymond, A.B. (Tufts) . . . . *Putnam, Conn.*
Brown, William James . . . . . *Boston*
Bruce, John Rufus . . . . . *N. Weare, N. H.*
Butler, John Dennison . . . . . *Boston*
Callahan, John Francis . . . . . *Boston*
Campbell, William Marie . . . . . *Dorchester*
Carley, Frederick James . . . . . *Tewksbury*
Carr, Dennis Henry . . . . . *Dorchester*
Carr, Gladys Lydia . . . . . *Chelsea*
Chalmers, Hattie Elizabeth . . . . . *Hudson*
Coburn, Clarence Orrin . . . . . *Manchester, N. H.*
Cole, Ralph Waldo Emerson . . . . . *Franklin Falls, N. H.*
Cummings, John Francis . . . . . *Brockton*
Davis, Ernest Leland . . . . . *Springfield*
Day, Cushman . . . . . *Boston*
Deacon, Thomas Irving . . . . . *Cambridge*
Doonan, Henry Edward . . . . . *Wellesley*
Dunham, Adeline Frances . . . . . *Boston*
Eaton, Marland Hooper . . . . . *Beverly*
Felch, Lewis Perley . . . . . *Boston*
Fletcher, Arthur Stanton . . . . . *Waterville, Me.*
Fletcher, Christopher . . . . . *Chelsea*
Foster, George Sanford . . . . . *Manchester, N. H.*
Gage, Arthur Tenney . . . . . *Winchester*
Galbraith, Anna Veitch . . . . . *Boston*
George, Arial Wellington . . . . . *Boston*
Goldberg, Elias . . . . . *Boston*
Grainger, Joseph Francis . . . . . *Cambridge*
Greenwood, Austin Ellsworth . . . . . *Lowell*

Ham, Helen Willard . . . . . *Middleboro*
Harrington, Clifton Ward . . . . . *New York, N. Y.*
Harrison, Columbus William . . . . . *Boston*
Hennessey, William Warren . . . . . *Salem*
Hermann, Louis Alfred . . . . . *Boston*
Holmes, George Winslow . . . . . *Belfast, Me.*
Hughes, Archibald William . . . . . *Boston*
Innes, Carrie Louise . . . . . *Boston*
Keenan, George Francis . . . . . *Boston*
Klein, Isaac . . . . . *Boston*
Lougee, John Leroy . . . . . *Boston*
Luce, LeRoy Alson . . . . . *Gaysville, Vt.*
Lynch, James Joseph . . . . . *S. Boston*
MacGhee, Charles Maxwell . . . . . *Boston*
MacNeil, Charles Seward Jadis . . . . . *Dorchester*
Mahoney, Charles Frederick . . . . . *E. Boston*
Mahoney, Walter Francis . . . . . *Hudson*
Makller, Moses . . . . . *Boston*
Marlin, Anna Sarah . . . . . *Boston*
Marr, Ben Butler . . . . . *Boston*
McCready, Leo Thomas . . . . . *Providence, R. I.*
Mehan, Joseph Aloysius . . . . . *Lowell*
Monahan, John Terrence . . . . . *Hopkinton*
Morse, Irene May, A.M. (Illinois Wesleyan Univ.) *Laramie, Wyoming*
Murphy, John Michael . . . . . *Cambridge*
Nickerson, Mary Abbie . . . . . *Cohasset*
Nolan, Henry Stuart . . . . . *Somerville*
Palmer, Louis James . . . . . *Malden*
Peters, Solon Wilder . . . . . *Sterling Junction*
Pitkin, Edith Winifred, B.A., (Wellesley) . . . *Brookline*
Raymond, Charles Stanley . . . . . *Boston*
Regan, William Henry . . . . . *Boston*
Roughan, Charles Michael . . . . . *Collinsville*
Segal, Jennie . . . . . *E. Boston*
Simms, Herbert Eugene . . . . . *Boston*
Stammers, Joseph Collins . . . . . *Boston*
Stevens, William Russell . . . . . *Marshfield*
Stone, William Livingstone . . . . . *Chelsea*
Suitor, Henry Albert . . . . . *Barton, Vt.*
Sweeney, Mary Agnes . . . . . *Nashua, N. H.*
Taylor, Roy Arnold . . . . . *Waltham*
Trottier, Arthur Ovilar . . . . . *Providence, R. I.*
Troy, Alice Gertrude . . . . . *Worcester*
Williams, David Lawrence . . . . . *Boston*

Wood, Harold Abbott . . . . . *Boston*
Young, Evangeline Wilson . . . . . *Boston*

Third Year

Adams, Letitia Douglas . . . . . *Cambridge*
Albro, Marion Louise . . . . . *Providence, R. I.*
Aldrich, George Herman . . . . . *Boston*
Bartlett, Fred Ai . . . . . *Melvin's Hills, N. H.*
Berry, William Christopher . . . . . *Charlestown*
Besse, Florence Osmer . . . . . *Orleans*
Blodgett, Merlin Freelan . . . . . *Milford, N. H.*
Bonelli, Raymond Peter . . . . . *E. Boston*
Bowker, Marion Esther . . . . . *Athol*
Cleaves, Harrie Franklin . . . . . *Bar Harbor, Me.*
Dainty, George Wood . . . . . *Somerville*
Dexter, Roger . . . . . *Brooklyn, N. S.*
Dobson, William Marshall . . . . . *Boston*
Dougherty, William Joseph . . . . . *Manchester*
Dunn, Daisy Moore . . . . . *Boston*
Gaffney, Mary Evangeline . . . . . *Salem*
Gates, Raymond Eugene . . . . . *E. Dedham*
Gettings, James Henry . . . . . *Boston*
Hatch, Ernest Downing . . . . . *Boston*
Herne, Leonard Garland . . . . . *Rockport*
Higgins, Aaron Locke . . . . . *Rockland*
Hopkins, Alice Josephine Biggs . . . . . *Chelsea*
Howland, George Lewis . . . . . *Boston*
Hunt, William Elliot . . . . . *Bridgewater*
Kearney, Joseph Patrick . . . . . *Lowell*
Kelly, Alice Elizabeth . . . . . *Dorchester*
Kerrigan, Joseph Henry . . . . . *Woburn*
Knudson, Marie Mette . . . . . *Boston*
Lanpher, Howard Arthur . . . . . *Boston*
Lima, Joseph Jacome Travassos . . . . . *Fall River*
Lynch, Daniel Lawrence . . . . . *Jamaica Plain*
Lyons, Frederick Lawrence . . . . . *Charlestown*
MacDonald, Ronald John . . . . . *Cambridgeport*
MacPherson, Lauchlin . . . . . *Upper South River, N. S.*
Mannix, Louis Edward . . . . . *Worcester*
Mara, Joseph Lawrence . . . . . *Boston*
Marr, Myron Whitmore . . . . . *Dorchester*
Martin, John Foley . . . . . *Boston*
McIntire, Frederick Joseph . . . . . *Lynn*
McQuade, Lewis Steele . . . . . *Boston*

McTiernan, James Michael . . . . . *Quincy*
Moran, Edmund Francis . . . . . *Chelsea*
Morgan, Charles Russell . . . . . *Allston*
Nettle, Paul . . . . . *Jamaica Plain*
O'Brien, Carl Robert . . . . . *Chelsea*
O'Connell, Lucy Jane . . . . . *Auburn, Me.*
Poole, Lawrence Earl . . . . . *Rockland*
Praino, Gaetano . . . . . *Boston*
Pratt, William Porter . . . . . *E. Weymouth*
Reeves, William Arthur . . . . . *Boston*
Richardson, Carl Engene . . . . . *Marlboro, N. H.*
Ricker, Carroll Henry . . . . . *Boston*
Rock, Timothy Francis . . . . . *Nashua, N. H.*
Roseman, Benjamin Franklin . . . . . *Chelsea*
Ross, John Robert . . . . . *Boston*
Sawyer, Earle Dewey . . . . . *Bridgeton, Me.*
Shaw, Frederic Enoch . . . . . *Boston*
Spaulding, John Doliver . . . . . *Mansfield*
Stott, Ardenne Albert . . . . . *Reading*
Sullivan, Edward Vincent . . . . . *Cambridge*
Taft, Annie Elzina . . . . . *Chestnut Hill*
Tighe, Eleanor Marie . . . . . *Keene, N. H.*
Tuttle, Howard Knowlton . . . . . *S. Acton*
Wells, Elwin Harrison . . . . . *Rumney, N. H.*
Welles, Franklin . . . . . *Boston*
White, Frank Warren . . . . . *Arlington*
Wilson, Edmund Winifred . . . . . *Waltham*
Young, Walter Harding . . . . . *E. Dedham*

Second Year

Abbe, Elizabeth Morrison . . . . . *Boston*
Addelson, Nathan . . . . . *Boston*
Allton, Fred Wilbur . . . . . *Attleboro*
Arnold, Seth Fenelon . . . . . *Boston*
Atchison, Charles Michael . . . . . *New Bedford*
Baxter, Alfred Ernest . . . . . *Sharon*
Blood, George Willard . . . . . *Hollis, N. H.*
Brennan, Edward Francis . . . . . *Natick*
Brown, Arthur Linwood . . . . . *Roslindale*
Burrier, Walter . . . . . *Boston*
Cahir, Thomas Francis, Jr. . . . . *Cambridge*
Callender, George Russell . . . . . *Northfield*
Campbell, Fred Glover . . . . . *Rockland, Me.*
Christian, Andrew Forest . . . . . *Boston*

Coburn, Harry Ray . . . . . *Canaan, N. H.*
Connor, George Aloysius . . . . . *Cambridge*
Conway, William Stanislaus . . . . . *Uxbridge*
Conwell, Walter Livingstone, Jr. . . . . *Boston*
Corcoran, John Gilbert . . . . . *Essex*
Costa, Domizio Augustine . . . . . *E. Boston*
Crimmins, Philip Patrick . . . . . *Brockton*
Crosby, Walter Hiram . . . . . *Beverly*
Crowley, John Joseph . . . . . *Everett*
Crowley, Robert Emmett, Jr. . . . . *Lowell*
Crummett, Florence Estelle . . . . . *Exeter, N. H.*
David, Olier Joseph . . . . . *Lowell*
Derby, Charles Arthur . . . . . *Boston*
Dodge, Percy Loraine . . . . . *Needham*
Donnell, Herbert Anthony . . . . . *Boston*
Elliott, Edward Scott . . . . . *Somerville*
Fay, Joseph Henry . . . . . *Boston*
Flagg, Harry Howard . . . . . *Charlestown*
Forsyth, James Perkins . . . . . *Concord, N. H.*
Foss, Ralph Emery . . . . . *Peabody*
Gardella, Bartholomew Anthony . . . . . *Medford*
Glunts, David . . . . . *Boston*
Grandmaison, Albert Joseph . . . . . *Nashua, N. H.*
Hadley, Amos William . . . . . *Worcester*
Hallisey, Joseph Edward . . . . . *Roxbury*
Hamm, Leslie . . . . . *Dorchester*
Hanlon, David Edward . . . . . *Hyde Park*
Honeij, James Albert . . . . . *W. Somerville*
Hopkins, George Richard . . . . . *Medford*
Janes, Benjamin Franklin, Jr. . . . . *Cambridge*
Johnson, John Birger Albert . . . . . *Lowell*
Kelley, Edward Paul . . . . . *Woburn*
Kickham, Charles Joseph . . . . . *Brookline*
Kirkpatrick, Gilbert Stanley . . . . . *Wilmington*
Lacey, Henry Orlando . . . . . *Cambridge*
Leland, Forest Le Roy . . . . . *Boston*
Liverpool, Coval Henry . . . . . *Boston*
Lupien, Henry John . . . . . *Cochituate*
MacQueen, James Allen . . . . . *Boston*
Mahar, Harold Robert Collins . . . . . *Smithtown, N. H.*
Manary, James Wescott . . . . . *Boston*
Manotas, Arturo Fabio . . . . . *Baranquilla, Colombia, S.A.*
Manotas, Carlos Manuel . . . . . *Boston*
Margot, Frederick Eugene . . . . . *Boston*

Maroney, Patrick Joseph . . . . . *Franklin*
Mayo, Thomas Franklin, PhG. (Mass. Col. Phar.) *Medford*
McCartin, John Edward . . . . . *Providence, R. I.*
McConville, Frederick Walter . . . . . *Boston*
McDonald, Louis Ronald . . . . . *Boston*
Merrill, Adelbert Samuel . . . . . *N. Belfast, Me.*
Metcalf, Julia Tracy . . . . . *Brookline*
Miller, George Andrew, Pharm.D. (Mass. Coll. Phar.) *Cambridge*
Miller, George Fremont . . . . . *Boston*
Mulvanity, Sadie Angela . . . . . *Nashua, N. H.*
Mysel, Hymen . . . . . *Boston*
Nutter, Roy Bartlett . . . . . *Boston*
Otis, George Herbert . . . . . *Scituate*
O'Toole, John Laurence . . . . . *Brighton*
Perkins, Franklin Haskins . . . . . *Jamaica Plain*
Perrault, Joseph Napoleon . . . . . *Manchester, N. H.*
Pettey, John Anderson . . . . . *Fall River*
Prenn, Joseph . . . . . *Boston*
Pulsifer, Walter Hall . . . . . *Abington*
Putnam, Edweena Restieaux . . . . . *Chelsea*
Randall, Harriet Noyes . . . . . *Wellesley*
Reese, John Arnold . . . . . *Attleboro*
Reinherz, George . . . . . *Boston*
Reynolds, Frank Leo Sinclair . . . . . *Boston*
Rice, Herbert Augustus . . . . . *Charlestown*
Roche, Thomas Neil . . . . . *Boston*
Rowe, Ellen Mae . . . . . *Watertown*
Rubin, Solomon Hyman . . . . . *Boston*
Sandler, Samuel . . . . . *Revere*
Scanlan, Maurice Thomas . . . . . *Dorchester*
Shapiro, Charles . . . . . *Boston*
Sheehan, Katharine Cecelia . . . . . *Salem*
Simonson, Louis, Pharm.D. (Mass. Coll. Phar.) *Middletown, Conn.*
Steeves, Frank Leslie . . . . . *Roxbury*
Streker, William Sylvester . . . . . *Providence, R. I.*
Tilton, Earle Edward . . . . . *Malden*
Toppan, Albert Brookings . . . . . *Newburyport*
Torosian, Paul David . . . . . *Everett*
Wallace, Harold Lowe . . . . . *Brookline*
Walsh, Thomas Frank . . . . . *Jamaica Plain*
White, Miriam Frances . . . . . *Boston*

First Year

Azadian, David George . . . . . *Boston*
Bailey, Karl Roland . . . . . *Jamaica Plain*
Barrier, Emile August . . . . . *Cambridge*
Blanchard, William Herbert . . . . . *Roxbury*
Blanchard, Winthrop Shirley . . . . . *Holyoke*
Boyden, Arthur Henry . . . . . *Winthrop*
Brady, William Francis . . . . . *Milford*
Cahill, Thomas Joseph . . . . . *Cambridge*
Capeles, Thomas Francis . . . . . *Haverhill*
Carpenter, Elbridge Arthur . . . . . *Lyndon Centre, Vt.*
Carrington, James Otis . . . . . *Malden*
Cassels, Louis Raymond . . . . . *Attleboro Falls*
Caswell, Walter Emery . . . . . *Campello*
Chase, George Berry . . . . . *Boston*
Claffy, John McMahon . . . . . *Taunton*
Conley, John Thomas . . . . . *Brockton*
Connolly, William Charles . . . . . *Jamaica Plain*
Connor, George James . . . . . *Worcester*
Cook, James Henry . . . . . *Brookline*
Coupal, James Francis . . . . . *Everett*
Courtemanche, Arthur . . . . . *Marlboro*
Crawford, Frank Wallis . . . . . *S. Weymouth*
Donovan, Thomas Roche . . . . . *Quincy*
Donovan, Walter James . . . . . *Providence, R. I.*
Doughty, Horace Everett . . . . . *Kittery, Me.*
Dow, Frank Edward . . . . . *Lynn*
Doyle, Thomas Francis . . . . . *Cambridge*
Fitzpatrick, James Joseph . . . . . *Salem*
Folger, George Arthur . . . . . *Melrose*
Frawley, William Thomas . . . . . *Marblehead*
Frisbee, Edward Boston . . . . . *Bridgton, Me.*
Gerald, Herbert Franklin Ph.G. (Mass.Coll. Phar.) *Brookline*
Gormly, Charles Francis . . . . . *Providence, R. I.*
Graham, Jay Perry . . . . . *S. Royalton, Vt.*
Harkins, William Joseph . . . . . *Quincy*
Harnett, Edward Henry Lewis, A.B. (St. Anne) *Dorchester*
Hayes, Will Francis . . . . . *Georgetown*
Heaslip, George William . . . . . *Woburn*
Hill, Harry Joseph . . . . . *Boston*
Holmes, John Frank . . . . . *Belfast, Me.*
Jannini, Michael Edward Arthur . . . . . *Boston*
Jannini, Ralph Crescenzio . . . . . *Winthrop*
Kaizer, George Ambrose . . . . . *Brookline*

Kelleher, James Patrick . . . . . *Brockton*
Kelley, Catherine Rose . . . . . *Nashua, N. H.*
Kelley, Edward Paul . . . . . *Woburn*
Khouri, Nasim Iskander . . . . . *Boston*
Knowlton, Edward Allen . . . . . *W. Newton*
Lee, John Alphonsus . . . . . *Woonsocket, R. I.*
Lewis, Charles Bernard . . . . . *Tufts College*
Loredo, Serafin . . . . . *Boston*
Maker, Maca . . . . . *Providence, R. I.*
Mains, Herbert Llewellyn . . . . . *Danvers*
Marshall, George Bates . . . . . *Waltham*
McRae, Alexander John . . . . . *Worcester*
Middleton, Charles Henry . . . . . *Roxbury*
Mintz, Samuel Charles . . . . . *Boston*
Mitchell, Howard Dykeman . . . . . *Chelsea*
Monahan, Edward James . . . . . *Bridgewater*
Moore, Francis Vincent . . . . . *Dorchester*
Muir, Robert Joseph . . . . . *Dorchester*
Murray, Benjamin Frank . . . . . *Boston*
Myrick, Alfred Winthrop . . . . . *Kingston*
O'Brien, Harry Francis . . . . . *Boston*
O'Connor, Patrick Henry . . . . . *New Bedford*
O'Dea, Nellie Geraldine . . . . . *Scranton, Penn.*
Ogden, John Edmund . . . . . *Newton Highlands*
O'Rourke, Edward James . . . . . *Cambridge*
Paine, Mortimer Harwood . . . . . *Harwich*
Pariseau, George Emory, Pharm. D. . . . . *Worcester*
Parker, Harold Francis . . . . . *Boston*
Perry, Charles Eugene . . . . . *Boston*
Pierce, Ralph Elliot . . . . . *Boston*
Place, Philip Wilfred . . . . . *Manchester, N. H.*
Poirier, George Henri . . . . . *Salem*
Potter, Marion Myrtle . . . . . *Winthrop*
Reebel, Arthur Scott . . . . . *Youngstown, Ohio*
Rosenbloom, Carl Webber . . . . . *Boston*
Ross, David Hector . . . . . *Boston*
Ryder, Harry Clifford . . . . . *Cambridge*
Schillander, Carl Axel . . . . . *Dorchester*
Scorgie, Helen Christine, A.B. (Radcliffe) . . *Cambridge*
Scott, George Henry . . . . . *Roxbury*
Shaughnessy, James Quinn . . . . . *St Stephens, N. B.*
Shea, Joachim Patrick, A.B. (Boston Coll.) . *Boston*
Spaulding, Edith Rogers . . . . . *W. Newton*
Sullivan, Andrew Joseph . . . . . *Brockton*

Sullivan, Charles Joseph . . . . . *Brockton*
Sullivan, Charles Michael . . . . . *Marlboro*
Sullivan, John Joseph, A.B. (Holy Cross) . . *Worcester*
Sullivan, Patrick Joseph . . . . . *Salem*
Taylor, Fred Bowers . . . . . *Concord, N H.*
Thompson, David Daniel . . . . . *Boston*
Towle, George Percy . . . . . *Dorchester*
Turner, William Kenneth . . . . . *Taunton*
Walker, Henry Allen . . . . . *Cambridge*
Welch, Daniel Edward . . . . . *Salem*
Wescott, Clement Plummer . . . . . *Portland, Me.*
Whelan, Edmond Vincent . . . . . *Natick*
White, George Arthur . . . . . *Cambridge*
White, John Robert . . . . . *Boston*
Woodward, George Napoleon . . . . . *Jacksonville, Ala.*
Zuslofsky, Jacob . . . . . *Boston*

Special Students

Bennett, William Henry . . . . . *Roxbury*
Bickford, Wallace Mellen . . . . . *St. Paul, Minn.*
Campbell, Robert Hugh . . . . . *Boston*
Condict, Alice Byram, M.D. (Chicago Hom. Med. Coll.) *Morristown, N. J.*
Cornwall, Andrew Hugh . . . . . *Portland, Conn.*
Cowan, Marion, Ph.G. (Mass. Coll. Phar.) . . *Lynn*
Cox, Ann Caroline . . . . . *Roxbury*
Crane, James Wilder . . . . . *Norwood*
Derby, Frederick William . . . . . *Arlington*
Derrick, Joseph Stephen . . . . . *Charlestown*
DeSorgher, Louis Lee . . . . . *Boston*
Doran, John Michael . . . . . *Charlestown*
Fiske, Rebecca Cutler . . . . . *Grafton*
Garry, John Joseph . . . . . *Methuen*
Gately, Mary Agatha Murray . . . . . *Boston*
Hamilton, Harry Lewis . . . . . *Oldtown, Me.*
Higgins, George Vincent . . . . . *North Abington*
Irving, Harry Washington . . . . . *Boston*
Kirkpatrick, Gilbert Stanley . . . . . *Wilmington*
Looney, Edward Michael . . . . . *Salem*
Mahoney, Francis Aloysius . . . . . *Boston*
O'Sullivan, Anna . . . . . *Boston*
Pagliuca, Frank Anthony . . . . . *Boston*
Quinlan, John Frances . . . . . *Woburn*
Stacey, Winthrop Downing . . . . . *Charlestown*
Toohey, George Alphonsus . . . . . *Roxbury*
Tryon, Geneva, A.B. (Vassar) . . . . . *Cambridge*

Dental School

[P. O. Address, 416 Huntington Ave., Boston, Mass.]

Senior Class

Barry, Henry Adams . . . . . *Salem*
Bonnell, Fenwick Clifton . . . . . *Malden*
Boyd, Walter Lawrence . . . . . *Cambridge*
Chapman, Frank H. . . . . *Meredith, N. H.*
Cheever, Annie Frances, Ph.B. (Brown) . . . *N. Attleboro*
Connell, Grover Joseph . . . . . *Boston*
Cook, William Henry . . . . . *Taunton*
Costello, Richard Joseph . . . . . *Cambridge*
Crawford, Arthur Archibald . . . . . *Cambridge*
Dickey, Gilmore Colby . . . . . *Dorchester*
Eaton, William Henry . . . . . *Somerville*
Fanning, Arthur Oscar . . . . . *Salem*
Grant, Ethel Edna . . . . . *Boston*
Harding, Arthur Clement . . . . . *Cambridge*
Ingalls, Byron Grayson . . . . . *Boston*
Jones, Warren Reese . . . . . *Stoneham*
Kerrigan, Joseph Patrick . . . . . *Cambridge*
Lowe, Arthur Stanley . . . . . *Boston*
Lyons, James David . . . . . *Allston*
MacCaleb, Ernest Wonson . . . . . *Gloucester*
Mahan, Joseph Ambrose . . . . . *Natick*
Manley, Francis Michael . . . . . *Brookline*
McCarthy, John William, A.B. (Holy Cross) . *Holyoke*
McDonell, Fred William . . . . . *Montreal, P. Q.*
McGee, Timothy Lawrence . . . . . *Worcester*
McGrath, George Henry . . . . . *E. Weymouth*
McIntosh, Arthur Herbert . . . . . *Boston*
McTernen, Malcom Bodwell . . . . . *Andover*
Melanson, Thomas . . . . . *Corberrie, N. S.*
Murphy, George Arthur . . . . . *St. John, N.B.*
Murphy, James Patrick . . . . . *Natick*
Neary, John Thomas . . . . . *Southboro*
Noonan, Kaen Aloysius . . . . . *Roxbury*
Oliver, Alton Elihu . . . . . *S. Braintree*
Pierce, William T. . . . . *Gardiner, Me.*

Potter, George Edwin . . . . . *Greenwood*
Ricker, Albert Winslow . . . . . *Cochituate*
Risegari, Hector George . . . . . *Roxbury*
Robbins, Walter Bartlett . . . . . *S. Braintree*
Talty, Joseph Edward . . . . . *Woburn*
Thomson, Harry Scott . . . . . *Moncton, N. B.*
Underwood, Edith Marion . . . . . *Allston*
Watson, Scott Emery . . . . . *Riverside, Cal.*
Wheeler, Ralph Deming . . . . . *Pittsfield*
White, Paul Gardiner . . . . . *Boston*
Whitney, Carl Harvey . . . . . *Somerville*
Wright, William Frank . . . . . *Roxbury*

Junior Class

Atamian, Armenag Garo . . . . . *E. Cambridge*
Bacon, Charles Harland . . . . . *Plainville*
Banks, Henry Lewis . . . . . *Dorchester*
Bernard, Rose . . . . . *S. Boston*
Bertrand, Alfred Charles . . . . . *Dracut*
Brackett, Henry Francis, Jr. . . . . *Dorchester*
Brown, Everett Mitchell . . . . . *Portland, Me.*
Channing, Raymond Elliott . . . . . *Albany, N. Y.*
Chappell, Percy Theophilus . . . . . *Charlottetown, P. E. I.*
Church, Harry Manthano . . . . . *Gardiner, Me.*
Clifford, Gerald Packard . . . . . *S. Paris, Me.*
Conway, Thomas Patrick Joseph . . . . . *Uxbridge*
Cutler, Homer Joseph . . . . . *Somerville*
Davis, Herbert Elmer . . . . . *Uxbridge*
Davis, Willard Sawtelle . . . . . *Hyde Park*
Eastman, Byron Levi . . . . . *S. Weare, N. H.*
Feffer, William . . . . . *Brooklyn, N. Y.*
Gallagher, Patrick Joseph . . . . . *Moncton, N. B.*
Gilstein, Harry Morris . . . . . *E. Boston*
Gower, Stanley Merrill . . . . . *Portland, Me.*
Halnan, Chester Augustine . . . . . *E. Weymouth*
Hanley, Ambrose Leo . . . . . *Providence, R. I.*
Hickey, Daniel Francis . . . . . *Boston*
Hill, Hugh Thomas . . . . . *Boston*
Hopkins, Charles Byron . . . . . *Roxbury*
Hutchinson, Lester Hurd . . . . . *Somerville*
Isenberg, Julius . . . . . *E. Boston*
Kelley, James Henry . . . . . *Brockton*
Lamkin, Everett Walter . . . . . *Lynn*
Lynch, Paul . . . . . *Waltham*

Lynn, Chester Homer . . . . . *Meriden, Conn.*
Mackey, Ouida Fairchild . . . . . *Boston*
MacKillop, Kenneth . . . . . *Lock Lomond, C. B.*
McAlevey, George Walter . . . . . *W. Lynn*
McDermott, Fred John . . . . . *Worcester*
Messer, John Hoag, ... *Gt. Barrington*
Metters, Harold Gifford . . . . . *N. Attleboro*
Miller, Charles Warren . . . . . *Brockton*
Montgomery, William Edmund . . . . . *Natick*
Nordgren, Percy Nils . . . . . *Boston*
Nutting, Ada Bartlett . . . . . *Quincy*
O'Connor, James Henry . . . . . *Winchester*
Packard, Warren Henry . . . . . *Brockton*
Palmer, Leslie Edwin . . . . . *Boston*
Pofcher, Simon . . . . . *Everett*
Potter, Roger Williams . . . . . *Roxbury*
Quinn, Benjamin Hopkins . . . . . *Whitinsville*
Reynolds, Carl Edgar . . . . . *Boston*
Rice, James William . . . . . *Malden*
Rice, Richard Leon . . . . . *Portland, Me.*
Richardson, Heze Sumner . . . . . *Mt. Desert, Me.*
Rochefort, Myron Stockbridge . . . . . *Abington*
Rollins, Charles William . . . . . *E. Boston*
Ross, Isidor Posner . . . . . *Boston*
Shay, George William . . . . . *Roxbury*
Siskind, Isador . . . . . *Jamaica Plain*
Smith, Kleber Wilbur . . . . . *Hartland, Me.*
Stevens, Sidney Wendell . . . . . *Somerville*
Sullivan, Abigail Cecelia . . . . . *N. Cambridge*
Taylor, John Franklin . . . . . *Plymouth*
Taylor, Leila May . . . . . *Salem*
Tingley, George Wright . . . . . *Boston*
Tishler, Mark . . . . . *Boston*
Tobin, Chester Edgar . . . . . *Malden*
Toombs, Benjamin Lawson . . . . . *Moncton, N. B.*
Tubbs, Herbert Stradivarius . . . . . *Cambridge*
Whitten, Charles Clifton . . . . . *Waltham*
Worthen, Annie Skinner . . . . . *Amesbury*

First Year

Adam, Arthur Richard . . . . . *Fall River*
Ahern, John Joseph, Jr. . . . . *Cambridge*
Bailey, William . . . . . *Boston*
Bangs, Raymond Carpenter . . . . . *Amherst*

Billings, Walter Joseph . . . . . *Canton*
Boland, William Henry . . . . . *Worcester*
Brown, Charles Raymond . . . . . *Mattituck, N. Y.*
Bryant, Warren Edward . . . . . *Worcester*
Burnham, John Fletcher . . . . . *Gloucester*
Burns, James Francis . . . . . *Worcester*
Canavan, William Henry . . . . . *Revere*
Carvill, Earl Alvarez . . . . . *Phillips, Me.*
Cassidy, William Cleveland . . . . . *Webster*
Clapp, Roger Irving . . . . . *Dorchester*
Coates, Frederick Fletcher . . . . . *Boston*
Coy, Lee Felch . . . . . *Windsor, Vt.*
Comstock, Frank Leslie . . . . . *Stoughton*
Cronin, Thomas Aquinias . . . . . *Forest Hills*
Darling, Harold Duncan . . . . . *Hyde Park*
Delano, John Holmes . . . . . *N. Plymouth*
Derby, Frank Amos . . . . . *Keene, N. H.*
Dexter, John Edward . . . . . *Abington*
Duddy, James J. . . . . *Brockton*
Ellis, Joseph Benjamin . . . . . *Everett*
Ewing, Walter Vickery . . . . . *Milford*
Fitzpatrick, Albert George . . . . . *Medford*
Foss, Albert Wilber . . . . . *Portland, Me.*
Fountaine, Ernest Hanson . . . . . *Haverhill*
Freeman, Dexter Carleton . . . . . *Maiden*
Gallagher, Cormick Vincent . . . . . *Leominster*
Gates, Ernest Willoughby . . . . . *E. Dedham*
Gavin, Marie Frances . . . . . *S. Boston*
Gaw, William Jackson . . . . . *Cambridge*
Gibbs, Roy Johnston . . . . . *Bridgewater*
Gilroy, Edward Francis . . . . . *Attleboro Falls*
Ginsberg, Samuel Lawrence . . . . . *Roxbury*
Goulet, Napoleon Joseph . . . . . *Boston*
Greene, Simon Karl . . . . . *Cambridge*
Hall, Arthur Dudley . . . . . *Dorchester*
Hall, Lawrence Whidden . . . . . *Wollaston*
Halleran, James Joseph . . . . . *Waltham*
Harrington, Frederick Hancock . . . . . *Worcester*
Harris, Lucien Hiram . . . . . *Natick*
Haven, Charles Philip . . . . . *Providence, R. I.*
Hayden, Thomas . . . . . *Newton Lower Falls*
Heckbert, Fred Percy . . . . . *Chatham, N. B.*
Henderson, Robert King . . . . . *Cordaville*
Hickey, Edith Mary . . . . . *Brookline*

Holmes, Burton Alonzo . . . . . *Walpole, N. H.*
Johnson, Earl Latimer . . . . . *Pittsfield*
Joy, Preston Wallace . . . . . *E. Weymouth*
Lambert, Horace Porter . . . . . *Chelsea*
Lawrence, Walter Addison . . . . . *Revere*
Leach, Ralph . . . . . *Whitman*
Lewsen, Marie Dora . . . . . *Bangor, Me.*
Libby, Bernard . . . . . *Roxbury*
Lipner, Morris Joseph . . . . . *Roxbury*
Lockary, John Franklin . . . . . *Biddeford, Me.*
Lombard, Lewis . . . . . *Somerville*
Lowell, Ralph Philip . . . . . *Boston*
Lyons, Joseph Vincent . . . . . *Dorchester*
Machado, Domingos Maniz . . . . . *Boston*
MacKintosh, Hugh Cameron . . . . . *Antigonish, N. S.*
Maguire, Hugh Charles . . . . . *Boston*
Mahoney, Richard Thomas . . . . . *Boston*
Mason, Elmer Wilbur . . . . . *Brockton*
Mataich, Kihita . . . . . *Charlestown*
McAree, Dominick James . . . . . *Haverhill*
McCarthy, Daniel Francis . . . . . *Chicopee*
Meeryeck, Gregory Sarkis . . . . . *Worcester*
Merrill, John Lummus . . . . . *Wollaston*
Miett, Elmer Peter . . . . . *Haverhill*
Morse, Arthur Linwood . . . . . *Lynn*
Morse, Karl Goff . . . . . *Dexter, Me.*
Noonan, Edward Joseph . . . . . *Roxbury*
Norris, Harold Francis . . . . . *W. Acton*
Parcher, Leon Earl . . . . . *Gardner*
Paxton, Harry Simmons . . . . . *Malden*
Pickering, Herbert Raymond . . . . . *Newington, N. H.*
Powers, Thomas Edwin . . . . . *Woonsocket, R. I.*
Priest, Leslie Duane . . . . . *Franconia, N. H.*
Provencher, Napoleon Octave . . . . . *Lowell*
Reid, Arthur Bradford . . . . . *W. Somerville*
Rice, Joseph Herbert Howard . . . . . *Weymouth Bridge, N. S.*
Riley, Maurice Leo . . . . . *Charlestown*
Roberts, Perley Ham . . . . . *Rochester, N. H.*
Robins, Thomas Ernest Earl . . . . . *Charlottetown, P. E. I.*
Rose, Charles Jackson . . . . . *Boston*
Ryley, William Henry . . . . . *Fall River*
Saunders, Robert Joseph . . . . . *Boston*
Sawyer, Ralph William . . . . . *Boston*
Saxton, Daniel Lawrence . . . . . *Brockton*

Simon, Vincent Charles . . . . . *Boston*
Small, Donald Meeds . . . . . *Biddeford, Me.*
Smith, Raymond Miner . . . . . *Cranston, R. I.*
Spencer, Norman . . . . . *Chelsea*
Stalker, Frank John . . . . . *Holyoke*
Tetlow, John Earle . . . . . *Providence, R. I.*
Turgeon, Emile Amédé . . . . . *Manchester, N. H.*
Turner, John Francis . . . . . *Salem*
Vincent, Eugene Todhunter . . . . . *Somerville*
Walper, David . . . . . *Chelsea*
Watson, Harry Lyman . . . . . *Manchester, N. H.*
Westwood, Walter . . . . . *Revere*
Whitney, Charles Edward, Jr. . . . . *Milford*
Winship, Frederick Henry, Jr. . . . . *New Bedford*

Special Students

Anderson, Vernon Gustave . . . . . *Worcester*
Carey, Willard Onesimus . . . . . *Roxbury*
Copithorn, Walter Edward . . . . . *Natick*
Gehrung, Arthur Francis . . . . . *N. Attleboro*
Gowen, Charles Edward . . . . . *Dover, N. H.*
Greene, Karl Simon . . . . . *Cambridge*
LaFlamme, Joseph Leopold . . . . . *Cambridge*
Lougee, Charles Samuel . . . . . *Parsonsfield, Me.*
McKenna, Charles John . . . . . *Boston*
Moderno, Louis . . . . . *Terceira, Azores*
Ramsdell, Charles Fred, Jr. . . . . *Dover, N. H.*
Reardon, Joseph Edmund . . . . . *Cambridge*
Slattery, Frederick Patrick, D.D.S. . . . . *Easthampton*
Stuart, Charles Sprague . . . . . *S. Paris, Me.*

Post-Graduate Students

Adams, Herbert William, D.D.S. . . . . *Dorchester*
Alleyne, Mary Elizabeth, D.D.S. . . . . *Boston*
Bellows, John Morton . . . . . *Maynard*
Betzen, von John Andrew Lowell, D.D.S. . . *Winthrop Highlands*
Billings, George Albert, D.D.S. . . . . *Canton*
Breed, Lewis Sherman, D.D.S. . . . . *Roslindale*
Costello, Francis J., D.D.S. . . . . *Newton*
Crosby, Georgina, D.D.S. . . . . *Somerville*
Eaton, John Hancock, D.D.S. . . . . *Boston*
Ewing, James Andrew, D.D.S. . . . . *Winthrop*

Flynn, Edmund Frances, D.D.S. . . . . *Taunton*
Gaffey, Joseph Michael, D.D.S. . . . . *Salem*
Gallup, Jennie Harvey, D.D.S. . . . . *Bristol, R. I.*
Hemenway, Frederick Mortimer, D.D.S. . . . *Newton Centre*
Horsfall, Arthur, PH.G., D.D.S. . . . . *Dorchester*
Humphrey, James, D.D.S. . . . . *Boston*
Kidder, William Nelson, D.D.S. . . . . *Providence, R. I.*
Knight, Joseph King, D.D.S. . . . . *Hyde Park*
Loizeaux, Jean Jacques, D.D.S. . . . . *Allston*
Luttropp, Knut J., D.D.S. . . . . *Boston*
Lyons, Frederick Weston, D.D.S. . . . . *S. Boston*
MacKinnon, John Roderick, D.D.S. . . . . *Boston*
Montgomery, Edward Manning, D.D.S. . . . *Boston*
Moran, Thomas Henry, D.D.S. . . . . *Brookline*
Nahrung, Johanna Rose, D.D.S. . . . . *Brookline*
Nason, Daniel Artell, D.D.S. . . . . *Revere*
Nye, Daniel Butler . . . . . *Tiensin, China*
Pierce, Myron Elbert, D.D.S. . . . . *Cambridge*
Quinn, Edwin A., D.D.S. . . . . *Boston*
Robinson, Henry Stetson, D.D.S. . . . . *Attleboro*
Sawyer, William R., D.D.S. . . . . *Dorchester*
Shatswell, Harry Kinsman, D D.S. . . . . *Dedham*
Stevens, Walter Leonard, D.D.S. . . . . *Somerville*
Taylor, Joseph Lee Clair, D.D.S. . . . . *Roslindale*
Winchester, Walter Forsythe, D.D.S. . . . . *Allston*
Woodward, Marion Lavinia, D.D.S. . . . . *Boston*

SUMMER SCHOOL

Biology

George Andrew Bates . . . . . Auburndale
Professor of Histology in Tufts Medical School

Charles Franklin Kingsbury Bean . . . . . W. Medford
Student, Tufts College

Curtis Whithed Nash . . . . . Winchester
Student, Tufts College

Medical Chemistry

K. C. Sheehan — Mary A. M. Gately — J. W. Manary

Histology

J. Fletcher Burnham	H. O. Lacey	G. H. Otis
A. F. Christian	Edw. M. Looney	Guetano Praino
A. A. Crawford	T. F. Mayo	Joseph E. Reardon
R. E. Crowly	G. A. Miller	Katherine C. Sheehan
John M. Doran	Joseph F. Nee	Frank L. Steeves
M. J. Lipner	Percey N. Nordgren	Harry S. Thomson

SUMMARY

Trustees		24
Overseers		16
Boards of Visitors		20
Directors of the Women		3

CORPS OF INSTRUCTION

Emeritus	3	
President and Professors	50	
Associate Professor	1	
Assistant Professors	16	
Demonstrators	3	
Instructors	69	
Lecturers	6	
Assistants	33	
Laboratory Assistants in the Medical and Dental Schools	24	
Total engaged in work of instruction	—	205
Other Officers, not previously counted		14

STUDENTS

COLLEGE OF LETTERS:		
Graduate	7	
Senior	66	
Junior	59	
Sophomore	93	
Freshman	139	
Special	22	—386
DIVINITY SCHOOL:		
Fourth Year	3	
Third Year	2	
FIVE-YEAR A.B.—B.D. COURSE:		
Fifth Year	3	
Fourth Year	1	
Second Year	2	
First Year	4	— 15
MEDICAL SCHOOL:		
Fourth Year	81	
Third Year	68	
Second Year	99	
First Year	103	
Special	27	
Graduate	2	—380
DENTAL SCHOOL:		
Senior	47	
Junior	68	
First Year	106	
Special	14	
Graduate	36	—271
SUMMER SCHOOL		24
BROMFIELD-PEARSON SCHOOL		19
Total registration of students		1095
Names appearing twice		28
Total number of students		1067

The following persons carried on study and investigation at the Harpswell Laboratory during the summer of 1905:—

George A. Bates, M.S. . . . . Auburndale
Professor of Histology, Tufts College Medical School

C. F. K. Bean . . . . . West Medford
Student, Tufts College

Alice M. Boring
More Fellow, University of Pennsylvania

Frank S. Collins . . . . . Malden

R. W. Hall, Ph.D. . . . . Bethlehem, Penn.
Professor of Biology, Lehigh University

Caroline M. Holt, A.B. . . . . Wellesley
Laboratory Assistant, Wellesley College

Caroline G. Howe, A.B. . . . . Gloucester
Instructor in Science and Mathematics in Gloucester High School

J. S. Kingsley
Professor of Biology, Tufts College

F. D. Lambert
Assistant Professor of Biology, Tufts College

Curtis W. Nash . . . . . Winchester
Student, Tufts College

Louisa H. Seeley . . . . . Jersey City, N. J.
Teacher of Biology, Jersey City High School

Nettie M. Stevens, Ph.D. . . . . Bryn Mawr, Pa.
Associate in Experimental Morphology, Bryn Mawr College

Clifton Augustus Towle, A.B. . . . . Worcester
Instructor in Science, Worcester Academy

M. A. Willcox, Ph.D. . . . . Wellesley
Professor of Zoology, Wellesley College

Naohide Yatsu, Ph.D. . . . . Tokyo, Japan
Graduate Student, Columbia University

INDEX

[Consult also the table of Contents, pages 6 and 7]

Absences, 196
Admission, Requirements for, 45
  Arts, Course in, 45
  Dental School, 273
  Divinity, Course in, 273
Engineering, Course in, 115
  General Information relating to, 57
  Medical School, 247
  Primary Group, The, 45
  Secondary Group, The, 45
  Certificate, By, 58
  From Other Colleges, 195
Anaesthesia and Extraction, Instruction in, Dental School, 272
Anatomy, Instruction in, 229
  In College of Letters, 92
Archaeology, Classical, Instruction in, 74
Applied Christianity, Instruction in, Divinity School, 182
Athletic Fields, 211
Athletics, 195
Bacteriology, Instruction in, Dental School, 270
  Instruction in, Medical School, 234
Biology, Instruction in, 90
  Graduate Department, 165, 166
Botany, Entrance Requirements in, 56
  Instruction in, 92
Bromfield-Pearson School, Admission, 283
  Board of Instruction, 282
  Expenses, 284
Buildings, Dental School, 266
  Divinity School, 186
  Barnum Museum, 210
  Bromfield-Pearson Building, 213
  Chemical Building, 212
  Dormitories, 214
  Goddard Gymnasium, 211
  Library, 209
  Medical School, 229
  Metcalf Hall, 214
  Power Station, The, 214
  Robinson Hall, 212
Certificate, Admission by, 58
Chemistry, Anticipation of General, Medical School, 248
  Course in General, 109
  Entrance Requirements in, 55
  Graduate Department, 164, 166
  General, Instruction in, Medical School, 231
  Instruction in, College of Letters, 87
  Instruction in, Department of Engineering, 134
  Instruction in, Dental School, 267
  Medical and Toxicology, Instruction in, 233
  Medical, College of Letters, 90
  Physiological, Graduate Department, 164
Children, Diseases of, Instruction in, 237
Commencement Parts, 61, 293
Committees, College of Letters, 44
  Dental School, 264
  Divinity School, 172
  Engineering Department, 114
  Faculty of Arts and Sciences, 39
  Graduate Department, 158
  Medical School, 227
Degrees Conferred in 1905, 289
  Requirements for, Bachelor of Arts, 59, 61
    Bachelor of Chemical Engineering, 119, 126
    Bachelor of Civil Engineering 119, 120
    Bachelor of Divinity, 173, 184
    Bachelor of Electrical Engineering, 119, 124
    Bachelor of Mechanical Engineering, 119, 122
    Bachelor of Science, 61, 107, 117
    Doctor of Dental Medicine, 273, 275
    Doctor of Medicine, 249, 250
    Doctor of Philosophy, 160, 166
    Engineer, Civil, 116
    Engineer, Electrical, 116
    Engineer, Mechanical, 116
    Master of Arts, 159
    Master of Science, 116, 160
Dentistry, Clinical, Instruction in, 269 272,
  Operative, Instruction in, 268
  Prosthetic, Instruction in, 269
  Theory and Practice, Instruction in, 271
Dermatology, Instruction in, 245
Divinity, Bachelor of, taken with A.B. in five years, 184
Drawing, Freehand, Entrance Requirements in, 56
  Instruction in, College of Letters, 93
  Instruction in, Department of Engineering, 130
  Mechanical, Entrance Requirements in, 56
Electricity, Instruction in, Department of Engineering, 136
  Graduate Department, 165
  Instruction in, College of Letters, 97
Electro-Therapeutics, Instruction in, 245
Employment for Students, 205
Engineering, *See* "Degrees"
Engineering, Instruction in, College of Letters, 95, 97
Engineering Department, 140
English, Advanced, Entrance Requirements in, 51
  Elementary, Entrance Requirements, 46
  Instruction in, College of Letters, 64
  Instruction in, Department of Engineering, 146

Graduate Department, 161
Ethics, Instruction in, Divinity School, 179
Expenses, Bromfield-Pearson School, 284
College of Letters, 167
Dental School, 277
Department of Engineering, 116
Divinity School, 187
Graduate Department, 168
Medical School, 253
Faculties, College of Letters, 43
Dental School, 259
Department of Engineering, 113
Divinity School, 171
Graduate Department, 157
Medical School, 221
Fellowships, Graduate Departments, 167
Fines, 196
Fine Arts, Instruction in, 90
French, Advanced, Entrance Requirements in, 52
Elementary, Entrance Requirements in, 48
Elementary, in Secondary Group, Entrance Requirements in, 51
Instruction in, College of Letters, 69
Instruction in, Department of Engineering, 148
Graduate Department, 162
Genito-Urinary Diseases, Instruction in, 245
Geology, Entrance Requirements in, 56
Instruction in, 92
German, Advanced, Entrance Requirements in, 51
Elementary, Requirements in, 47
Elementary, in Secondary Group, Entrance Requirements in, 51
Instruction in, College of Letters, 67
Instruction in, Department of Engineering, 148
Graduate Department, 162
Greek, Advanced, Entrance Requirements in, 53
Elementary, Entrance Requirements in, 49
Elementary, in Secondary Group, Entrance Requirements in, 51
Instruction in, College of Letters, 72
Graduate Department, 162
Gynaecology, Instruction in, 237
Clinical, Instruction in, 240
Hebrew, Instruction in, 75
Histology, Instruction in, College of Letters, 92
Dental School, 267
Histology and Embryology, Instruction in, Medical School, 232
History, Advanced, Entrance Requirements in, 54
Elementary, Entrance Requirements in, 49
History and Public Law, Graduate Department, 163, 166
Instruction in, College of Letters, 79
Of Religions, Instruction in, Divinity School, 177
Homiletics, Instruction in, Divinity School, 182
Honors, in Electricity, 206
Honors and Honorable Mention, College of Letters, 205, 206, 293
Medical School, 249
Hygiene, Elementary, Instruction in, 238
Hygiene and Sanitation, Instruction in, 238
Insurance, 215
Italian, Instruction in, 70
Laryngology, Instruction in, 242
Latin, Advanced, Entrance Requirements in, 53
Elementary, Entrance Requirements in, 49
Elementary, in Secondary Group, Entrance Requirements in, 51
Instruction in, College of Letters, 70
Graduate Department, 162
Law, Public, and Administration, Instruction in, College of Letters, 81
Divinity School, 175
Lectures, Divinity School, 172, 186
License to Preach, 186
Major Departments, 63
Subjects, 105
Mathematics, Advanced, Entrance Requirements in, 54
Elementary, Entrance Requirements in, 50
Instruction in, College of Letters, 84
Instruction in, Department of Engineering, 128
Graduate Department, 163
Medical Preparatory Course, 249
Medical Schools, Graduates of Other, 109
Medical School, Preparatory Course of One Year, 246
Medicine, Clinical, Instruction in, 238
Legal, Instruction in, 243
Mercantile and Military, Instruction in, 243
Theory and Practice of, Instruction in, Dental School, 271
Theory and Practice of, Instruction in, Medical School, 235
Mental Diseases, Instruction in, 241
Mineralogy, Instruction in, 93
Music, Entrance Credit in, 45
Instruction in, 97
Neurology, Instruction in, 240
New Testament, Instruction in, 177
Obstetrics, Instruction in, 236
Office Hours, 109
Old Testament, Instruction in, 176
Operative Technics, Instruction in, Dental School, 268
Ophthalmology, Instruction in, 242
Oratory, Instruction in, 66
Orthodontia, Instruction in, 270
Otology, Instruction in, 244
Pastoral Theology, Instruction in, 183
Pathology, Instruction in, Dental School, 270
Instruction in, Medical School, 233
Pedagogics, Instruction in, 78
Pharmacology, Instruction in, 232
Philosophy, Instruction in, 75
Physics, Entrance Requirements in, 55
Instruction in, College of Letters, 85
Instruction, Department of Engineering, 136
Physical Training, Department Statement, 100
Promotion, College of Letters, 192
Dental School, 274
Medical School, 248

Psychology, Normal Medical, Instruction in, 241
Physiology, Entrance Requirements in, 56
Graduate Department, 164
Instruction in, 91, 230
Political Science, Instruction in, College of Letters, 82
Instruction in, Department of Engineering, 148
Graduate Department, 163
Prizes, 204, 294
Program, Tabular, College of Letters, 102–105
Tabular, Department of Engineering, 150–153
Unassigned Subjects in, 193
Prosthodontia, Instruction in, 269
Pulmonary Diseases and Climatology, Instruction in, 236
Rectum, Diseases of the, Instruction in, 245
Registration, College of Letters, 192
Medical School, 256
Religious Observances, 186, 191
Rooms, Diagrams of, 216
Regulations, 215
Rent, 215
Science, Bachelor of, taken with A.B. in five years, 117
Science, Course in General, 107
Scholarships, College of Letters, 199
Divinity School, 187
Graduate Department, 168
Shopwork, Entrance Requirements in, 57
Instruction in, College of Letters, 95
Instruction in, Department of Engineering, 132
Special Students, Regulations, College of Letters, 195
Summary of Officers and Students, 326
Summer Courses, 255, 280, 285
Surgery, Instruction in, 235
Abdominal, Instruction in, 243
Clinical and Operative, Instruction in, 239
Instruction in, Dental School, 271
Orthopedic, Instruction in, 243
Theism, Philosophy of, Instruction in, 180
Theses, Titles of, 292, 293
Theology, Instruction in, 181
Tuberculosis, Clinical, 237
Tufts College Studies, 191
Vacations and Terms, 196, 255, 279
Women, Loan Fund for, 204
Zoology, Entrance Requirements in, 56

PUBLICATIONS OF TUFTS COLLEGE

General Catalogue
Commemoration Volume
Catalogue of the Medical School
Catalogue of the Dental School
Catalogue of the Divinity School
Catalogue of the Engineering Department
Catalogue of the Bromfield-Pearson School
Circular of the Graduate Department
Announcement of Courses
Register of Officers and Graduates
Pamphlet of Illustrations